

A black and white photograph showing a dense thicket of tall grasses and reeds in the foreground, with a body of water visible in the background. The vegetation is dense and appears to be growing along a shoreline. The water in the background is calm and reflects the light. The overall scene suggests a natural, possibly coastal or marshy, environment.

The island of Hawaii produces more sugar than any of the other islands, the island of Oahu coming next, followed by Maui and Kauai. The annual output of the islands since 1894 has been as follows:

In 1903 the total tonnage produced was 437,991 short tons. The capitalization of the plantations was \$64,878,-

relatively improved methods of cultivation and fertilization and to the introduction of more thrifty varieties of cane. While the yield of cane has greater importance due to new lands not being permitted as an important factor along with the gain from progressive methods of cane farming. A considerable part of this gain on the irrigated plantations was due to the yields of three plantations situated in a favorable locality bordering on Pearl Harbor. The acreage of cane harvested from these plantations in 1903 was 10,419 and the sugar yields 88,768 tons. Omitting these plantations from the list of irrigated estates would reduce the average yield per acre of irrigated plantations for 1903 from 3,377 pounds to 10,844 pounds, and of 23 pounds. Two of these plantations, representing 49,903 tons of the 1903

A field test conducted at the experiment station of the Hawaiian Sugar Planters' Association in Honolulu showed that without irrigation it was only possible to obtain 1,600 pounds, or less than 1 short ton of sugar per acre. This was with a rainfall of 32.5 inches per year. The largest of the irrigated plantations have a much smaller rainfall than 32.5 inches, and it would not be possible to harvest even the small acre output indicated by the unirrigated cane at the experiment station. A yield of 1,600 pounds of sugar to the acre of the islands as a whole from 9,385 to 8,700 would not justify the expense of growing, harvesting, and milling the same, and it is safe to say that were the sugar lands of this Territory entirely dependent upon rainfall, the 1903 crop would

Probably in no other cane-growing country does the subject of fertilization receive so much consideration as in the Hawaiian Islands, and the study which has been given to this question by plantation managers has done much to raise the sugar yield per acre throughout the Territory. Planters here have adopted a policy different from that usually in vogue. They do not wait to fertilize after the soil is depleted and exhausted, but practice the plan of sustaining the food qualities of the land and bettering

100

	(2,000 pounds to the ton.)					
	Tons.	1894.	1895.	1896.	1897.	1898.
Hawaii	72,109	61,643	100,209	146,736	91,066	117,239
Maui	33,669	27,735	29,997	41,047	45,933	54,389
Oahu	18,843	17,433	35,782	28,029	34,181	45,820
Kauai	41,701	42,816	51,650	54,414	58,594	65,359
Total.....	166,432	149,627	225,828	251,126	229,414	282,867
						289,544

LOADING SUGAR ON STEAMER.

"HOW'S THIS FOR HIGH?"

THE COFFEE INDUSTRY

By WM. M. BRUNER in Governor Carter's annual report to the Secretary of the Interior:

The coffee crop of 1903 was the largest in the history of the islands, and exceeded 3,000,000 pounds. The total value of all coffee exported to the United States and other countries for the year ending June 30, 1904, was \$184,180; for 1903, it was \$236,860, while for 1902 it was only \$126,644.

While coffee is grown in all the principal islands of the group, 95 per cent of it is produced on the Island of Hawaii, of which over 2,000,000 pounds or 80 per cent of the total Hawaiian production is produced in the district of Kona (whence the name Kona coffee), where it may be stated roughly that the industry furnishes employment to 1,000 people.

The entire area planted to coffee and now producing on the islands is under 4,500 acres. Much of the planting is classed as wild coffee; that is, the trees are not topped and are cultivated only in an irregular manner. These trees are cheaply cared for, growing somewhat under shade and in rocky ground, the growth of weeds is small and while the crop of coffee on such trees is no more than 700 or 800 pounds per acre, it is cheaply picked, for it ripens almost uniformly. In better soil where

the trees are topped, overbearing is the result, to the very great detriment of the trees, but by the application of fertilizer these trees are maintained in good condition, while the yield of coffee per acre is more than double that from the untopped, so-called wild trees.

The cost of production in Kona is about 7 1/2 cents per pound, and the coffee is bringing the producer about 10 cents at present. The cost of production in Hamakua is probably 10 cents and should net the producer 12 cents, as the Hamakua bean is larger and more sought after by the coffee roasters. The difference in the cost of production in the two districts, which produce the bulk of the crop, is due chiefly to the difference in the cost of picking, for in Hamakua coffee does not ripen as regularly and uniformly as it does in Kona.

The price of coffee has been very low for the past seven years, but the year 1903 was the most remarkable in its history, for during it prices reached their lowest basis and production its largest maximum. While the Brazil crop has very materially failed from the enormous 1901-2 crop of 15,000,000 bags, her production has been great and there has been an oversupply of Brazilian coffee. At the same time the production of mild coffees, in which class all coffee except Brazil production is included, has been on the increase, and in 1903 was over 5,000,000 bags. This affected the sale of the Hawaiian coffees, and will no doubt have a depressing effect on the sale of the next crop. So, that while Brazilian production has fallen off, and is likely to continue to, on account of the prohibitive tax



SCENE ON COFFEE PLANTATION.

against planting in Sao Paulo, where Santos coffee comes from, planting is not likely to take place there for four years, in the meanwhile the production

of mild grades has increased from 3,000,000 to 5,000,000 bags. But it can safely be stated that the world's consumption of Brazilian coffee has gone

ahead of production for the first time since 1899-1900, although in a comparatively small way, so that overproduction in Brazil, which was the most depress-

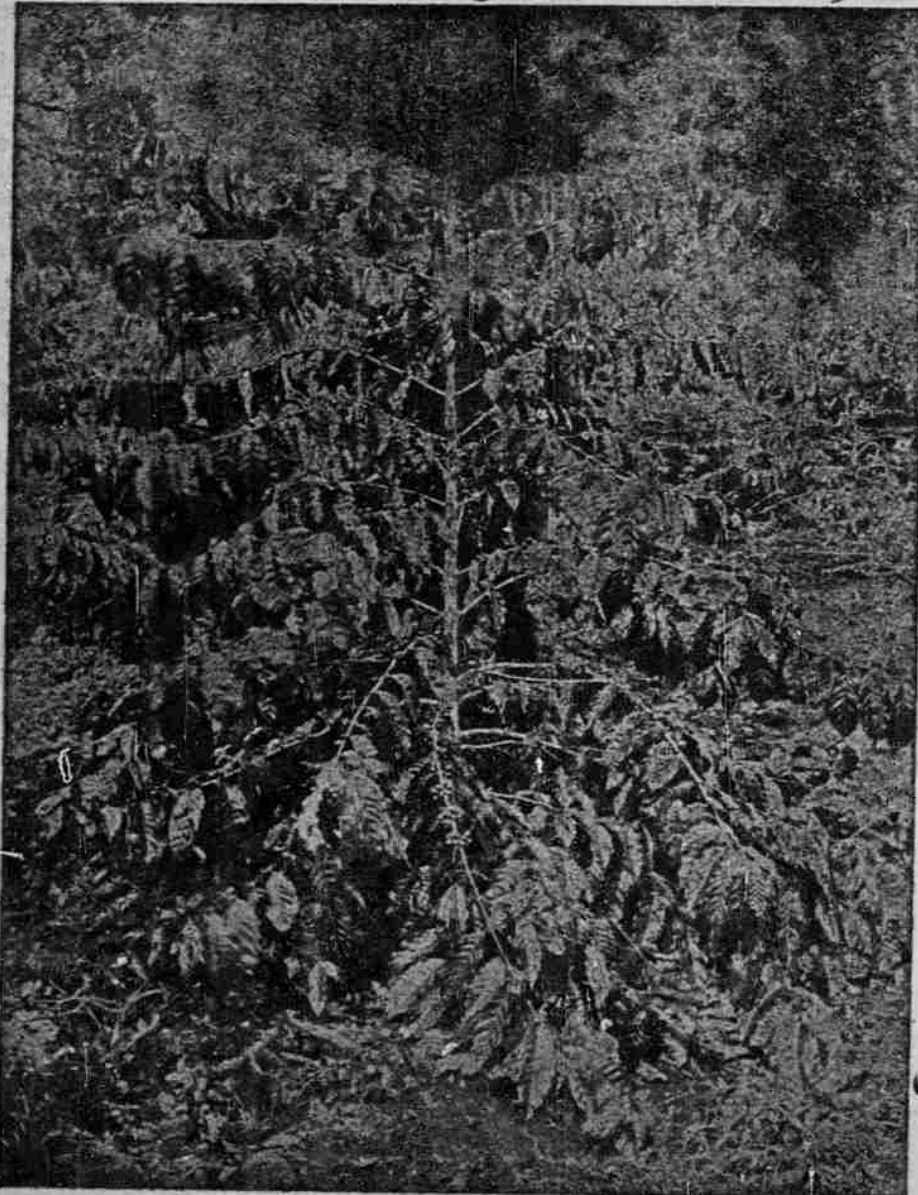
ing factor in the coffee-producing world, has ceased. Frost in 1902 and drought in 1903 put a good many plantations out of bearing, while the long period of low prices caused hard times, without any new planting, and thousands of the laboring class are leaving the country. It is said that over 20,000 left last year.

The United States is the largest purchaser of coffee, using about 11 pounds per capita, importing in 1903 \$61,329,564 worth, of an average value of 6 1/2 cents per pound. Four-fifths of this coffee came from Brazil and was paid for mainly in cash, for the total imports from Brazil for the year amounted to \$69,000,000, while the exports from the United States were only \$10,000,000, leaving \$59,000,000 to be paid in cash.

To show what this means in a long period, during the years 1830-1903, inclusive, according to statistics by the United States Government, the imports of coffee into the United States total 22,125,000,000 pounds, valued at \$2,500,000,000, import price.

The United States employed 10,555 men in distributed mail last year. The cost, distributed among 1,400 lines, was \$63,594,000. In 373 accidents to mail cars, eighteen clerks were killed and seventy-eight seriously injured.

A catalogue of autograph letters published by a London dealer, has surprised a good many people by showing the fact that Charles Dickens' full name was Charles John Hoffman Dickens.



A KONA COFFEE TREE.

ABOUT THE LIVE STOCK INDUSTRY

By ALBERT F. JUDD in Governor Carter's Annual Report to the Secretary of the Interior.

It is not an easy matter to report briefly the present state of the live-stock industry in Hawaii. In the first place there is little information available, even in the office of the secretary of the Hawaiian Live Stock Breeders' Association. The association is young. An accurate report at the present time could be made only after personal inspection of the ranches on each island. The second difficulty is caused by the absence of any history of the industry, although cattle and sheep have been raised here, and horses also, since the days of Vancouver.

RANGES.

It is difficult also to concisely describe the ranches themselves, situat-

ed as they are on the eight islands, separated by rough channels from the principal market in Honolulu and each of the ranches having its own peculiar topographical conditions. While the ranches on the low levels, namely, below 2,000 feet elevation, have many characteristics in common, there is a great difference among them, due to whether or not they are on the windward or leeward side of the island, the rainfall on the leeward side being much less than on the windward. Barren lava flows have their influence. The ranches above the 2,000 feet elevation line are in another class, all of them practically being on the islands of Maui and Hawaii.

GRASSES.

On the low level ranches on the leeward side the grasses in the pasture become dry in the hot summer months.

The pastures at this time are assisted, however, by the beans of the algeroba tree. As this tree spreads, as it does readily, being carried in the dung of animals, the fodder problem during the summer is lessened. It is on the leeward sides of the islands that this tree has taken its greatest hold. Apparently it has begun to be acclimatized on the windward slopes, although it has as yet made little impression.

After the winter rains these pastures are all that could be desired. Their lack of permanence, however, makes their present condition undesirable.

The lack of distinct seasons and regularity in rainfall have to be taken into account by every ranchman. These facts complicate for him the problem of having his herds always well fed.

There are a number of indigenous grasses on the islands which are excellent feed and are of great value for fattening purposes. They are mostly grasses that cannot stand continued heavy stocking, and large areas of dry and rocky country, which in the past was considered the best fattening lands, are nearly denuded at this time. Much has been done by fencing off such places and giving the location an entire rest for a period of time, with invariably results in the Hawaiian grasses again taking hold.

The introduction of dry range grasses, however, will do much for this class of country. Experiments are now being conducted and the importation of seed is steadily going on in the different states throughout the Territory. On the moister upper elevations a great variety of the best grasses in foreign countries have been established here within the past few years. Among the grasses which are doing well are the perennial rye grass, Kentucky blue grass, redtop, orchard grass, Natal redtop, Bromus inermis, Paspalum dilatatum.

The introduction of new grasses has had much to do with the increased carrying capacity of the various ranges. While much of the land formerly used for cattle has been taken for sugar plantations and much more destroyed, so far as immediate use is concerned by lantana, yet the carrying capacity of the island today is far greater than it ever was before. Of course this is not alone accounted for by a greater diversity of good feed, but is largely due to the general improvement of the ranges in consequence of intelligent distribution of water, better stock, and also in the construction of paddocks, which allow the grazer to regularly rest portions of his ranch whenever so desired, and minimizes the danger from overstocking and running out some of the best grasses growing upon the land.

This question of fodder in the past is now mentioned because of its intimate relation to the present state of the livestock industry.

HORSES.

From what has been stated it will be seen that horses are raised under the best conditions on the uplands, where the mares are well fed all the year round. The hard conditions of the lowlands are mainly responsible

for the degenerate kanaka plug and rice field plow horse.

This thought leads me to say that the Island of Hawaii produces a surplus of horses of the broncho type superior to those recently passing through Honolulu from San Francisco to Manila on the U. S. army transport Dix, and possessing the additional advantage of not needing to be acclimatized for use in the Philippines, and also of being 2000 miles nearer Manila. As Hawaii has horses to sell it surely is not out of place to call the above matter to your attention.

CATTLE.

The cattle industry has not reached the feeding stage. This is due to the absence of fodders, which can be grown cheaply. Experiments are now being made with the growing of corn in the Kula district on the Island of Maui, and will shortly be undertaken on Molokai. It has been suggested also that the waste from the sugar mills, together with the cane tops now not utilized, might be available also for this purpose. All the cattle and sheep slaughtered on the islands are what would be called "grass fed."

Different ranges are adapted to different breeds of cattle; it cannot be said that any one breed are the cattle for the islands. Without any accurate data I should say that the Hereford is the most popular, or, at least, should be in most locations. There has been a large introduction of Herefords, Shorthorns, Angus, Devons, and Holsteins.

Up to within ten years ago very little was done in the introduction of superior stock. Importations were made before this time, but were small in number and at long intervals of time; so much so that it made no decided impression upon the herds. Within recent years, however, the grazers have seen the importance of introducing new blood and grading up their stock. Large numbers of pure blooded stock are being introduced annually, which has already made a decided improvement and within a few years stock on most ranches should compare favorably with those of other countries.

Every herd of cattle has a residuum of old blood in it, cattle descended and bred from the old Spanish cattle landed here by Vancouver. One of the problems for the ranchman is the turning of this undesirable part of his herd into cash. The conformation of the stock with its slab sides and long legs is such that even when in good condition much of the weight is bone. The blood is hardy, but matures late. The stock is wild and often for this reason is badly bruised while going to market. The color of the stock is often yellow or black and tan, with occasionally a brindle hide. The market in Honolulu will not admit of the sale of a big lot of this stock at once, so each ranch has to try to work them off, often to the neighboring plantations or local market. This is being done by all intelligent ranchmen as fast as possible. It is upon this blood that most of the herds are built.

The 8242 head of cattle slaughtered in Honolulu between July, 1903, and July, 1904, averaged 445 pounds per

head. This includes cows as well as steers. Separate statistics are not available.

"Liver fluke" is still a scourge in certain localities. No cure is known for this disease among the ranchers. "Red water" is also prevalent in a few herds. The Territorial laws concerning quarantine against the diseases of animals appear to be insufficient. Until this matter is taken hold of by the Federal Bureau of Animal Industry and an inspector with full authority is stationed in this Territory there is a constant danger that diseases like "Texas fever" and "rinderpest" may slip in and decimate our herds.

The greatest pest on the ranches is the horn fly introduced some six or seven years ago with stock from the mainland. They bother cattle and horses day and night. On the latter they often cause sores on the backs even of brood mares which have never been handled. An unsuccessful attempt was made by our association in



HAWAIIAN RANCH HOUSE.

1902 to import tumble bugs from Mexico to combat the pest, and it is hoped that Messrs. Koehle and Perkins, the entomologists who are now in the antipodes, may be able to send us some bug or insect to prey on the larvae and thus bring relief to the herds.

At the present time the Territory supplies all the beef consumed locally. As methods improve there is a probability that there will be an overproduction and new markets must be sought. Possibly they may be found in supplying the United States Army transports en route to Manila. It is believed, however, that one or two severe droughts such as we have had in the past will probably stop overproduction.

Honolulu is the chief market for beef and mutton in the Territory. Hawaii has but three harbors in which the steamers of the interisland fleet can tie up to the wharf—Honolulu, on the Island of Oahu; Hilo, on the Island of Hawaii; and Kaunakakai on the Island of Molokai.

From July 1, 1903, to July 1, 1904, from

WATER.

Water is being intelligently developed on each ranch and the multiplication of well-watered paddocks is the goal toward which every ranch is working.

It is realized that an improvement in the herd and greater weights on the butcher's account sales are dependent upon the carrying out of the above ideas.

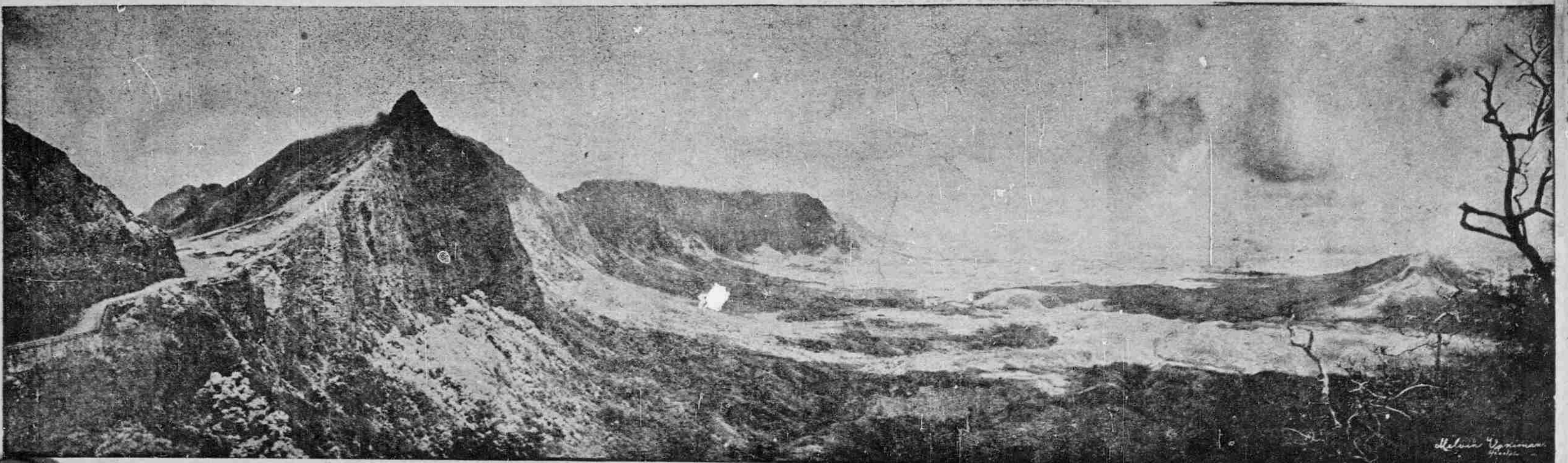
CENSUS.

No census of the live stock industry has yet been taken and it is difficult to make estimates of value. About the only accurate thing is the number of animals slaughtered in Honolulu. In addition to this each ranch slaughters locally or sells to the neighboring sugar plantations. Without trying to be more than approximate, I estimate Hawaii's herd as follows: Cattle, 140,000; sheep, 95,000.

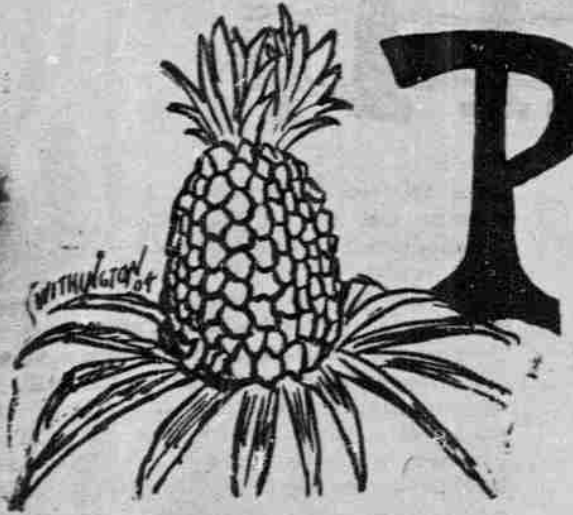
SHEEP.

Our sheep are inferior in blood and conformation to our horses and cattle.

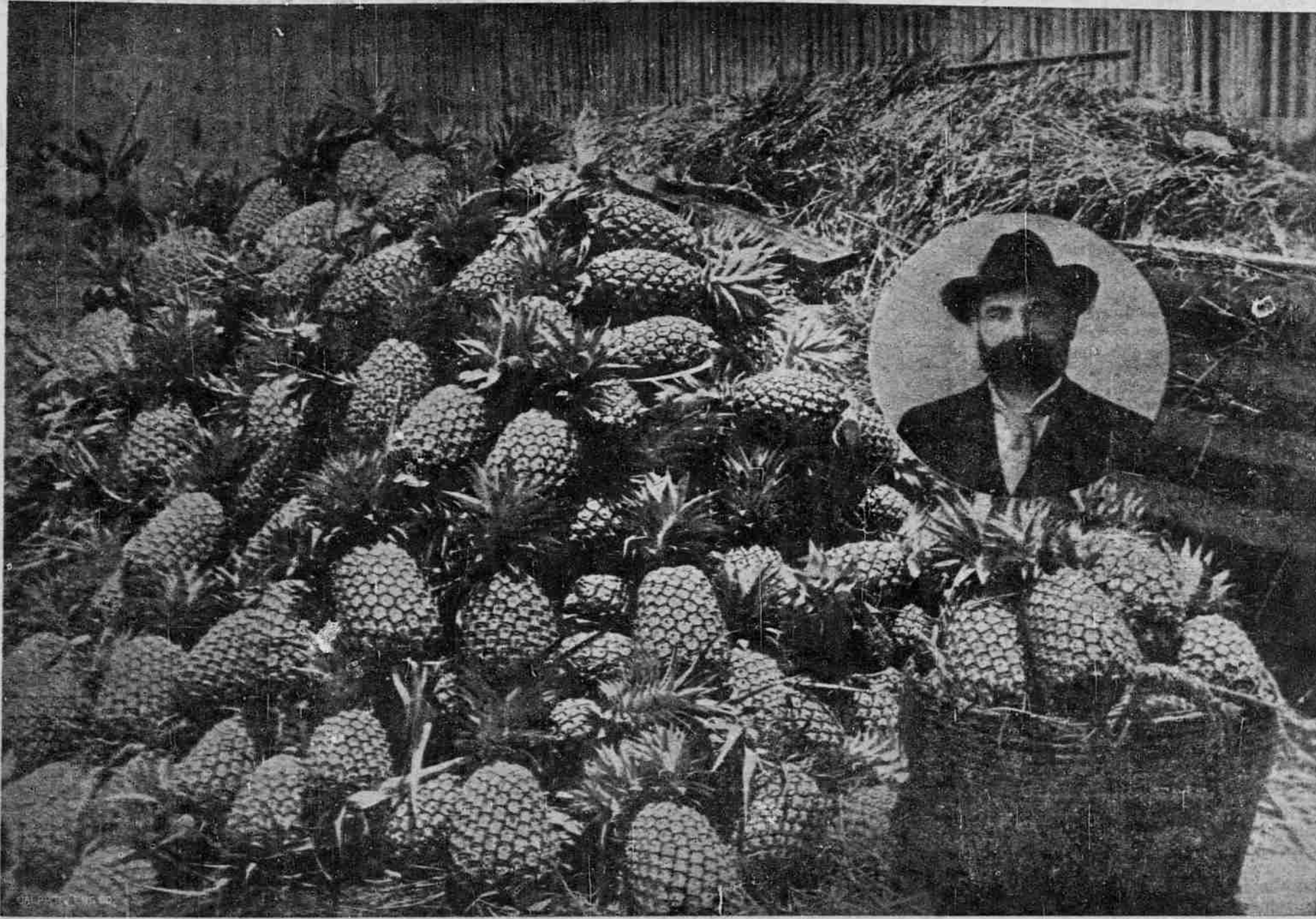
(Continued on page 7.)



PANORAMA FROM NUUANU PALI.



PINEAPPLES, A PROFITABLE PRODUCT.



HAWAIIAN PINEAPPLES AND THE LATE D. G. CAMARINOS, A PROMINENT EXPORTER.

The pineapple seems to have been indigenous, as nearly as any vegetable product was indigenous, to the Hawaiian islands. At least, when the first white men came to the islands, pines were found as one of the table delicacies of the natives, and to this day there are wild pineapples growing in favorable localities on all of the islands.

Long ago, even before there was any systematic attempt at the cultivation of the fruit, it was found that the pineapples of Hawaii were much more juicy, and much sweeter than those found in any other portion of the tropical world. This fact was noted by the first white men who ate of the Hawaiian pines—and it has been noted since by experts from different quarters of the globe where this delicate fruit is grown.

It was noted likewise, that the wild pineapples of Hawaii were inclined to larger growth than the wild pines found anywhere else. The soil and climate of the islands, and of all the islands, seemed, indeed, to be especially adapted to the highest development of this most delicious of all tropical fruits. But it is only of late years that there have been found men in Hawaii sufficiently alive to the advantages afforded by nature here to aid by intelligent effort in reaping the harvest of wealth that is thus indicated. To be sure, pines have always been grown, more or less, by the natives of Hawaii—when they did not spare themselves the trouble of production by going out into the hill lands and picking the wild fruit. A few white men, also, at their country homes and in their gardens have grown pineapples for use on their own tables, and it has at all times been possible to pick up pineapples in the city markets of Honolulu. But they have not always been abundant—nor, if the truth must be told in large local demand. The Hawaiian pineapple has been one of those home blessings that was not appreciated because it was to be procured at our own doors. Doubtless, if the good people of these islands had had to import the product, the pineapple habit would by this time have grown to something like the proportions the character of the fruit would seem to deserve. The pineapple habit is growing, however, and will continue to grow apace.

The growth of the pineapple industry, like the growth of most industries in these islands, was attended with some considerable discouragements at the beginning. But this was particularly true with reference to the pineapple industry. It seemed that there was a malice fate attendant upon any project to grow anything else but sugar, in a commercial way, although everything else would grow. As a matter of fact, when the Pearl City project was started, it was at least four years before any progress was made at all that looked like achievement.

But the men who had faith in Hawaii, and in pineapples, persevered. How well they have been rewarded, let the figures tell. The beginning of the pineapple industry, as everybody knows, was small. There was, in the first place, the difficulty of getting land upon which to found the plantations. That was overcome, in more than one place, after severe discouragement. Then there was the difficulty of getting plants, but that, too, was overcome. It was only overcome in a measure, however, for there is still a short supply and will continue to be, perhaps, for many years. The men who have embarked in pineapple culture on a large scale have still need of all the plants that can be produced from their own stock, and are quite willing to buy at fair rates all that can be offered.

Lately, there has been the difficulty of getting the product to market. Market! That is the pet bugaboo of all the Silurians who would not have any enterprise started in the islands, in an agricultural way at least, because that enterprise never has been carried on. Do not plant anything, say the Silurians. You are too far from your market. What is the good of growing anything that you cannot sell? And, indeed, the Silurians are, right this far, that it is not profitable to grow a thing that you cannot sell. Where the Silurian calculations fail is that they do not want anybody to try to sell anything.

The pineapple men, not being at all Silurian, produced their article, a superior quality, and found their market. In the beginning, frightened a bit by the Silurians, perhaps, in spite of themselves, no effort was made to market anything but canned pineapples. Of these, it was soon found that the American market, a rich market and freely open to the producers of Hawaii since annexation, was quickly appreciative of a product of such excellence. It would take all that was offered by the pineapple canneries of the islands, and wanted more.

For several years, the island producers were content with the exploitation of this market. They had found, contrary to the prophecies of the Silurian, that the transportation companies were glad to ship all their product that was offered, and they saw at last the golden promise of reward for long years of labor opening before them. As a matter of fact, water carriage is the cheapest carriage, and a sea port need never want for means to reach the world with what it has to ship. So long as the winds blow over the sea, men will build ships—and other men will find the wherewithal to load them.

But this is to wander a little from the subject. The pineapple men, gaining confidence from success, made one more long stride forward in their business. Their canned product had been pronounced immeasurably superior to anything that had ever before been offered in the American market. Experts, visiting the islands, had found the fresh pines grown here better than anything produced anywhere in the world. Now,

the pineapple is a strictly tropical product, and yet it is always to be had in the markets of the great cities of the temperate zone. The rich people who dwell in those cities can afford luxuries, and are willing to pay for them.

The pineapple men of Hawaii, arguing from these premises, saw that the pines eaten in the large cities of the mainland must have been shipped from some tropical region. They could not all be hot-house product. The producers of Hawaii had at least one large and very rich city right at their own door—the city of San Francisco. Why not reach out for that market, at least. And some of the bolder spirits among them made the first shipment of fresh pineapples to the mainland, crating the fruit in an attractive way and making the shipment by express to insure proper attention and prompt delivery at the other end of the road. The project was to ship the fruit from here, prepaid to an address in California, and at the first the matter was altogether an experiment.

It met with success, which should not have been surprising, because pineapples are constantly shipped from Jamaica to London, but which was most gratifying to the bold local man who had conceived of the project. And now the shipment of fresh pineapples to the coast has grown into a very important part of the business of the planters, and it is a branch that is capable of development to an incalculable degree.

The production of pineapples in the islands is increasing, steadily, and most satisfactorily. There are plantations on three of the islands, although pines are produced on all of the larger islands of the group. It is difficult to arrive at the exact figures in the matter of acreage of the plantations, but it has been estimated that 415 acres in the three islands of Oahu, Maui and Hawaii are

exclusively devoted to the cultivation of pineapples. This, of course, embraces only the larger plantations. Fifteen acres were planted to pines on Hawaii during the year, 15 acres on Maui and 235 acres on Oahu. This makes a total of 265 acres planted during the year.

The number of plants set out during the same period in the area devoted to the culture of pineapples was as follows: On Maui, 300,000; on Hawaii, 350,000; on Oahu, 23,400,000.

There were two new canneries built during the year, that of the Haiku Fruit & Packing Co. on Maui, and that of W. W. Bruner, Napoopoo, Hawaii. The Pearl City Fruit Company and the Hawaiian Pineapple Company each enlarged its original plant. The product of the canneries for 1903 was, approximately, 8,000 cases of first and second quality fruit. The product for the current year will be, approximately, 20,000 cases, according to the best estimates.

The pineapple, in its growth, is a plant having many peculiarities. Not the least of these, perhaps, is its manner of reproduction. The plant, from its setting out time, is usually eighteen months in coming to fruition, but the result is worth the waiting. Occasionally a plant will go over the first bearing period. When it does, that is when the big pines are borne. But, ordinarily, it may be figured that the plant will fruit at eighteen months. The fruit is gathered, and, after cutting, in the second year two plants spring from the stock of the old one, and there is a double yield from that plant. The ratoon process, however, can only be gone through with once. The plant, although it then dies, lives again. The crown of it has put out a plant, which makes from the cut fruit, although these plants from the crown are somewhat delicate. Every plant is constantly putting forth suckers,

which are the ordinary plants sold in nurseries for stock. Lastly, after the plant is useless for bearing, the whole thing is cut up and buried and from every leaf springs up a plant, which in its turn bears for two years and dies and lives again in its young.

Thus, when you once get stock, you will have stock all the time in constantly increasing quantity. Say a planter has one hundred acres in pines. These pines would be of various ages, not all bearing. The plants are set, on an average, 9,000 to the acre, which makes about 900,000 plants. It will be seen that the planter will have a stock that will enable him to set out as many plants as he desires on a small plantation, with abundance likewise to keep up his original acreage. The increased acreage is responsible for the short plant supply in the islands.

The process of canning pineapples, as it is carried on in the island plantations, is clean work, and very appetizing. In fact, if the man who uses Hawaiian canned pineapples were privileged to see the fruit prepared, he would but want to use the more of it. The golden apples, dead ripe, are delivered in wagons from the fields at the doors of the canneries. There each one has both ends slashed off by a couple of Japs, who stand with sharp knives beside the constantly growing piles of fruit. It goes on a long table to men at the peeling machines; then to other men who core it and trim it by machinery to the size that fits the can in which it is put up. After this, it is put through still another machine like a series of revolving covered knives, from which it drops in slices that fit into the can exactly.

The small fruit and the rich end slices, and the parings drop into baskets to be canned as "graded" fruit, or made into luscious pineapple jam, and these

ends and parings are carried along on an endless belt to a great cider press which squeezes out the juice to be made into syrup and poured into the cans of pineapple. For the fruit is canned in its own fragrant juices, with about 24 per cent of refined sugar. Not a drop of water is used. The man upon whose table Hawaiian canned pineapple appears, gets nothing but pineapple.

The dropped slices of the largest fruit are put into cans by neat women workers, the same number of slices to each can for all are of equal thickness, and the cans are passed along to a machine that fastens them with sanitary tops. Then they are carried to the exhaust, where the air in them is heated, to be presently released, and through the cooler, which gives them the final touch before being labeled for the market. The cans are tested again and again, to see that all air has been exhausted from them, and are then boxed to be sent to the ends of the earth. The so-called "graded" fruit, which is only the smaller fruit mulched, goes through a process precisely similar, and the pineapple jam in glass jars is a by-product also of most canneries. But all the fruit is of the very highest quality, and as it is canned dead ripe the full delicious flavor of the pines of Hawaii is all preserved.

The foreign trade of Japan for the year 1903, according to statistics just published, was the largest of any single year in the history of the empire, namely: Imports, \$155,652,000, an increase of \$23,800,000, as compared with 1902; exports, \$142,800,000, an increase of \$15,232,000, as compared with 1902. The value of our trade with Japan for 1904 was about \$72,000,000.

VANILLA.

By EDWARD H. EDWARDS in Governor Carter's annual report to the Secretary of the Interior:

Of itself the most valuable of what may be termed the aerial parasites, the vanilla vine promises to give to the tropical islands of the United States a new source of revenue and an added importance in the domestic economy of the country. For half a century at various points throughout the Hawaiian archipelago vanilla plants have been grown, more as a matter of experiment or for effect than in an attempt to produce a profitable crop. The plant has flourished wherever it was given attention, and to the efforts of Allan Herbert, at one time commissioner of agriculture under the Kingdom, is largely due the success which now seems about to crown the efforts to make productive this new industry.

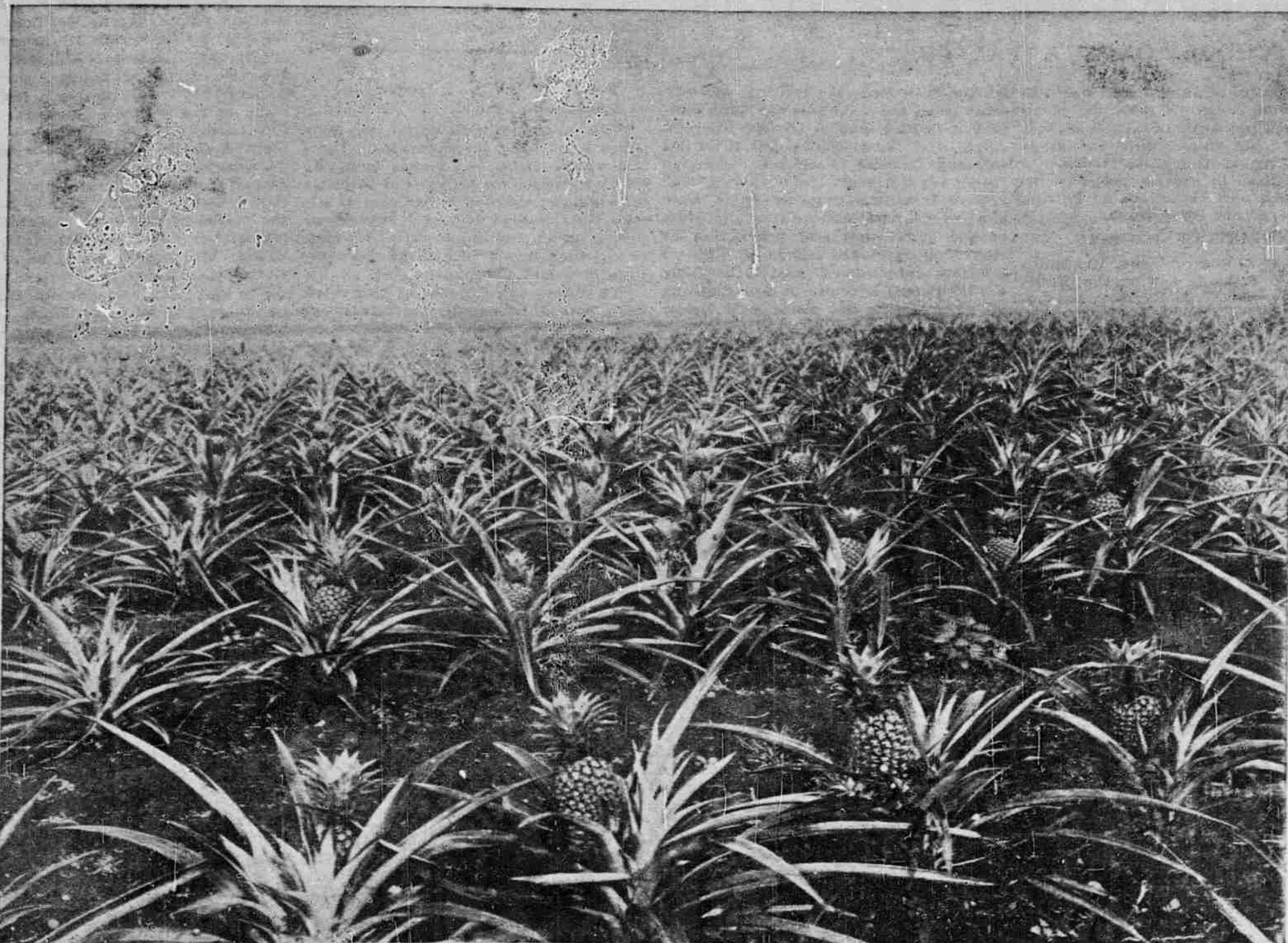
Tropical in its nature, thriving best upon the soft, spongy growths, it was but natural that the vanilla plant should thrive wonderfully in our protected districts. Experience has proven that nowhere do the conditions necessary exist in greater perfection than in the Kona or southern side of the large island of the group, Hawaii. There is found a rich soil, decomposed lava, with an average of 80 to 100 inches of rainfall, and the growth of primitive forest to furnish the shelter for the vines. Although an aerial plant, the vanilla adapts itself to a variety of soils. For instance, where a fern tree has found foothold among the rocks the vanilla will make its home, or in the free soil of the Aa or light lava, it will grow as luxuriantly. The vines require support, and it is best for their success that these be natural rather than artificial. These facts make possible a new development among the deserted coffee plantations, which ceased to be profit paying some time since. The tree fern and ti plant both offer excellent natural supports and furnish the needed sustenance for the vines.

The great difficulty so far has been in the procuring of the cuttings from which to start the plantation. Importations have been made from India and from the Caribbean Sea and Central America, but a majority of these plants have failed to adapt themselves to the climate. Some few have lived and from these cuttings were made within the first year, so that the original vine multiplies itself many times. In the experience of the pioneer in this line in the islands, E. H. Edwards, Vanilla Park estate, Napoopoo, more than 20,000 cuttings were imported to get 5,000 vines; or, to put it differently, bringing in a sufficient number of plants to start a 20-acre plantation he found himself with but 5 acres growing.

The vine grows rapidly and bears somewhat profusely once it has made its home in its new surroundings. In the island of Hawaii, which is absolutely tropical on its southern slopes, though tempered by trades to the north, vines have been known to bloom within ten months after planting, but it is not fair to expect a crop until the second year. Once planted, with the ground fairly clean around the trees used as natural supporters, the cost of maintaining the plantation is very small. Several times during the year the grass and weeds would have to be cut from about the vines, but other than that the trimming and gathering of the pods furnish light work for the daughters of a family. The pods picked at their maturity are cured by drying under cover, but this is light work and the process would be readily learned. In fact it is probable that once the industry gets a secure foothold central curing establishments will spring up in the midst of any producing district.

As to the future of the industry, it would appear that nothing more is needed than that production be protected, for the demand seems almost unlimited. One New York importer has asked for from 10,000 to 20,000 pounds a year of high-class product, and on this the price must vary from \$4 to \$8.50 per pound. Each vine will produce about 25 full-sized pods per year. To be of the very first class these pods must run 7 inches in length, and all the shorter ones classing as inferior grades. As it takes 100 of the cured pods to make a pound, the 1,000 vines usually planted to each acre would therefore mean 250 pounds of cured pods to each acre of the plantation. It can thus be seen that a vanilla of 5 acres should give a family a comfortable income, once the vine is in full bearing. The use of frequent cuttings from the growing vines makes it possible to renew the bearing vine and keep the plantation in constant health, so that in the absence of some disease or pest, none of which are now known, the productiveness of an estate would be practically interminable.

Apocryphal of the more or less general demand that a Southern man be appointed by the president to fill one cabinet position, the record of Southern cabinet officers is recalled. Montgomery Blair, of Maryland, Edward Bates of Missouri and James Speed of Kentucky were members of Lincoln's first cabinet, and Mr. Speed continued to serve in the second cabinet. In Grant's first cabinet were Cheswell of Maryland and Akerman of Georgia, and in his second were Eristow of Kentucky, Creswell of Maryland, and, for a brief period, James W. Marshall of Virginia. Hayes had among his advisers Carl Schurz of Missouri, Goff of West Virginia and Key and Maynard of Tennessee. Garfield called Hunt of Louisiana to the navy department and Arthur was served by him for more than a year. Harrison had the advice of Elkins of West Virginia, and Noble of Missouri. Gary of Maryland and Hitchcock of Missouri sat with McKinley, and Hitchcock is sitting with Roosevelt.



HAWAIIAN PINEAPPLE FIELD.

BANANAS IN HAWAII.

Bananas have been shipped to the mainland of the United States from every port in the Hawaiian Islands from which steamers have sailed to the coast, and such shipments are made now in greater or less quantity. But the shipment of bananas as a really commercial proposition is now and for a number of years past has been carried on for the most part from the port of Hilo, on the island of Hawaii. There is, however, no reason in commerce nor in nature why bananas should not be shipped in large quantity from every one of the islands. This is a product for which there is a free market, if the product be but here to supply it, and the product can be raised in abundance if intelligent attention is turned to the matter.

In this connection, so high an authority as the Hawaiian Forester and Agriculturist, in a long review of the subject printed in its August number for the current year has this to say: Hawaii ought to establish a large export of bananas to the Pacific Coast, one which should control the entire market to the Missouri River and north to Canadian Pacific Railway points. If growers and shippers do their part of the business properly, the transportation companies on sea and land will probably find it to their interest to do the rest, at rates the trade can stand, in speedy and scientific carriage, so that the fruit will be delivered fit to eat at places of consumption. There is no reason why the banana industry of Hawaii cannot develop as good a market in the Pacific Coast territory as that of the West Indies has done in the Atlantic Coast territory.

EXAMPLE OF JAMAICA.

Jamaica has about doubled its shipment of fruit in the past five years, the annual value thereof being now above five million dollars, or over 60 per cent of the total exports of the colony. Nearly seven-eighths go to the United States, and the remainder to the United Kingdom and other British possessions. In the year 1903 the total quantity of bananas grown and exported by Jamaica was about eight million bunches. It is estimated that 33,000 acres are under cultivation, comprising 240 estates or thereabout, which vary in area from 20 to 500 or 600 acres, together with holdings of less than 20 acres cultivated by hundreds of settlers. Old abandoned cane lands, on the southern side of the island, have been transformed into luxuriant banana groves yielding, by the aid of irrigation, 300 bunches to the acre.

The foregoing data, together with many practical lessons, are contained in a report on the fruit industry of Jamaica by W. E. Smith, manager of the Trinidad government railway, who visited Jamaica as a special representative of the Trinidad Agricultural Society. Jamaica has a code of regulations that have become the recognized standard there for buying and selling. A full bunch, or "straight" as it is technically known, consists of nine hands or better. Eight hands count as three-quarters, seven hands as a half and six hands as a fourth. Abnormal bunches of fourteen and fifteen hands are generally subject to higher prices by arrangement.

"Big bunches mean better fruit, more convenient handling and safer carriage, also higher prices from the wholesale dealer," Mr. Smith writes. "These the shipper requires, and pays his premium for getting. He does not want small and inferior specimens, and will only take a limited proportion of them in any case. On the other hand, the grower cannot, under the most favorable circumstances, avoid a certain percentage of small bunches, and he is quite satisfied to sell them at the reduced rates referred to. The fruit cut from young plants is usually undersized. Patches of inferior land and unfavorable situations produce similar results, and from a variety of causes the planter is obliged to reckon upon a proportion of low grades in his annual crop. At any rate, the arrangement seems to work all right in Jamaica and is generally considered to be perfectly equitable. Its reaction upon the cultivators is, moreover, far-reaching and beneficial, inasmuch as it forces upon them the all-important necessity of good tillage, intelligent management and careful handling, as the only means of realizing satisfactory returns."

GREAT CARE IN HANDLING.

Mr. Smith says that the process of cutting, handling and transporting bananas in Jamaica is one of increasing care and anxiety. The stem is cut on

the top just below the head, when the bunch topples over and is caught by a second helper. It is not allowed to fall to the ground. Sharp machete or cutlass does the requisite trimming, and the refuse is afterward chopped up and left on the soil. The remaining stump is allowed gradually to rot from the top, which admits of the heavy amount of sap it contains being slowly returned to nourish the young sucker at its root. The bunches are next roughly graded and tallied, then carried ("headed" is the word used to designate the mode of carrying) out to some convenient place and there packed in trash to await removal to the nearest railway station or shipping depot. All this is done under the eye of an experienced overseer.

TRANSPORTATION METHODS.

Donkeys are used for carrying the bunches crook fashion; and where carting has to be performed, the fruit is carefully stowed in the vehicles, trash being used to prevent bruising and chafing. It is a crime for any person even to attempt to ride on top of a load of bananas in transit. Specially constructed wagons and carts are used in Jamaica for conveying bananas over the country roads. They are made with springs, and are fitted with high sides and ends, as light and open as possible. These vehicles are exceedingly strong as well as light. The wagons will accommodate 150 stems of bananas, equal to three tons, and the carts about a third of that quantity.

When the journey has to be performed partly by rail, the bananas are brought to the station and transferred to the cars with the same amount of watchfulness and care as before. Trash is again used, and the work of loading is undertaken almost entirely by the buyer's agents.

SHIPPING ARRANGEMENTS.

In putting bananas afloat, the main features consist in "heading and shouldering" the stems from the sheds on the wharves into the holds of the ship—combined with the smart work done by the expert checkers, under whose eyes every individual bunch undergoes a final inspection. These fruit vessels also pick up fruit around the coast, when the bananas have to be handled from shore to ship in boats of various kinds. In the steamers bound for the United States the fruit is stowed on simple racks or bins, without any trash whatever, and the holds are specially ventilated only. The comparatively short voyage of four and a half or five days does not call for any other treatment, but with the boats to Bristol and Manchester, England, cool storage on the most approved principle is provided. Mr. Smith says: "I do not think that many Jamaica bananas are crated. A system of care,

tained a consignment of this variety, which will be distributed to such localities and to such agriculturalists as will ensure their careful propagation, preparatory to final distribution of the suckers. Of bananas now grown here, the Chinese variety (Musa Cavendishii) predominates, shipments to the Coast being practically all of this species. No great effort has seemingly been made to produce, in any appreciable quantity,

is very feeble on account of the slowness of its decomposition, and it is preferable, according to the authoritative advice of Semler, to make composts of them in mixing them with ashes, lime, farmyard manure, etc., and to allow them to rot during a year; still it will be necessary to add potash and phosphoric acid, in which they are deficient. The guanos generally employed at the Azores and in the Canary Islands, the oil cakes and the fish manure employed in India, are equally insufficient, and ought also to be made complete by the addition of potassic and phosphated manures.

"Some excellent results have been obtained in Madeira in a volcanic soil, poor in potash and in phosphoric acid, but rich in nitrogen and better provided with carbonate of lime than the greater part of tropical soils, by the application of a complete manure, testing:

Nitrogen13 per cent
Potash20 per cent
Phosphoric acid16 per cent

"This manure, which is a mixture of very concentrated and very soluble products is applied in the proportion of 50 grammes per plant, equal to 1½ ounces, in a trench made about eighteen inches around the stem. The application of this manure is made twice a year, so that each plant receives in all 100 grammes of the mixture (3 1-2 ounces).

"To us this quantity appears too little. Also, it would be to the interest of the planter to strengthen still more the proportion of potash in the complete manure by giving the whole of the nitrogen under an organic form, as oil-cakes, guanos, fish manure, farmyard manure, composts, etc.

We advise the trial of a manure testing:

Potash20 per cent
Phosphoric acid10 per cent

"This manure can be very easily prepared by mixing for manuring a hectare planted with 1500 plants (equal to 600 plants per acre) 400 kilos of sulphate of potash, containing 50 per cent of potash, 600 kilos of mineral superphosphate, or the same quantity of basic slag, which would furnish at the same time lime and phosphoric acid.

"To reduce the expense of transport, there would be equally an advantage

in giving the phosphoric acid in the form of super-phosphate containing 45 per cent of phosphoric acid; there would then be required 240 kilogrammes per hectare.

(These quantities, reduced to English weights and measures, would be as follows: 400 kilos of sulphate of potash per hectare are equal to 880 pounds, and this is equal to 344 pounds per acre. Six hundred kilos of mineral superphosphate are equal to 1300 pounds per hectare, and this is equal to 590 pounds per acre; 240 kilos of the stronger super-phosphate, generally known as Professor Wagner's 'double phosphate,' is equal to 528 pounds per hectare, represented by 211.2 pounds per acre. I take the standard adopted by Professor Crookes in his translation of the famous work on chemical manures by George Ville.)

"The mixture can be easily made without there being any fear of loss of fertilizing materials. It should be employed in the proportion of 400 or 600 grammes per plant, according as the preference may be given to the double super-phosphate or to the common kind. (Equal to 14 oz., and to 1 lb. 5 oz., respectively.) Care must be taken to place the manure in a trench made around the stem, to avoid placing it in direct contact with the latter, so as to prevent accidents.

"This manure costs at the maximum 200 francs per hectare, about one penny-half-penny (3 cents) per plant without counting the nitrogenous manures. It is a very small expense, which will be largely compensated by the regularity of and increased yield in the crops."

Considering that the banana is a herbaceous plant and that, like all herbaceous plants, it requires nitrates in the early stages of its growth, the translator (J. Neish, M.D.), says in the Journal of the Jamaica Agricultural Society that in cultivating a few specimens of the Chinese banana (Musa Cavendishii) he sets out two closely planted circles of the cow-bean (Vigna sinensis) around each banana so as to furnish the nitrates that may be required on digging in the beans at the period of flowering. Doubtless the leguminous plants, so plentiful in their variety in Jamaica, would be of essential service, if not in rotation, at least as an auxiliary and ameliorating crop in the cultivation of bananas.

As to the opportunity to engage banana culture on the islands and the prospective returns to be expected from that culture on Government lands available for the purpose, some correspondence that passed between certain Territorial officials and inquirers seeking information on these heads, will be of the last interest at this time. In response to a letter from a Costa Rican planter, who expressed a desire for knowledge as to the adaptability of Hawaiian soil and climate for banana culture, and who asked also the prices at which suitable lands for the purpose could be procured, Superintendent of Public Works Holloway wrote:

W. Lewes Evans, Esq., Hacienda La Philadelphia, Panama River, Costa Rica, C. A.—

Dear Sir: Replying to your letter of March 21 inquiring as to the possibilities of banana growing in the Hawaiian Islands, we take pleasure in giving you the following information:

In order to make the subject clear to you we will at once explain that while the bulk of the Hawaiian bananas are grown on the island of Oahu and shipped through the port of Honolulu, apparently the greatest opportunity for development of the business is on the larger island of Hawaii, with shipments through the port of Hilo. Bananas are now being shipped from Hilo to San Francisco and also from the port of Kahului, on the island of Maui. From these points steamers do not at present make regular sailings more frequently than once a month, so the difficulty is chiefly one of transportation. It is, however, unlikely that there would be any difficulty in obtaining transportation for bananas, once there were large shipments available.

From Honolulu there are usually from four to six steamers a month, and they take from five to seven days in making the passage to San Francisco.

Taking up your list of questions we will answer them in order.

1. Parts of the five largest islands are adapted to bananas, but commercially, at present, only Oahu, Maui and Hawaii.

2. It is difficult to say what the average value of banana land is. The Territorial Government has disposed of such land at from \$2 to \$4 per acre, and from that up to \$30 or \$40. Further information on this subject will be forwarded to you from the Land Office.

3. Averages wages are about 75 cents per day.

4. Labor employed is chiefly Japanese and Chinese, the former predominating. These laborers are transient, for the most part, and consequently the labor supply is somewhat uncertain, and at times is rather scarce.

5. Most of the bananas now shipped from Honolulu are either raised in the close vicinity to the city, and hauled to the wharves in wagons, or are brought into town on the Oahu Railway, from points along the shore line. The railroad rates from Honolulu run from six cents a bunch at twelve miles out, to twelve cents a bunch at fifty-six miles out. The Hilo Railroad Company have been requested to forward to you a schedule of their rates to Hilo, (Island of Hawaii,) from points in the Hilo, Oiaa and Puna districts. Rate from Honolulu to San Francisco, is forty cents per bunch, from Hilo, forty-five cents, irrespective of size.

7. The average weight of banana bunches grown here is estimated at from fifty to eighty pounds, and the number of hands will probably fall slightly under nine.

8. Bananas are grown here on various classes of soil, alluvial mud, volcanic clayey soils, and porous volcanic soils.

9. Bananas are raised all the way from sea level to an elevation of two or three thousand feet.

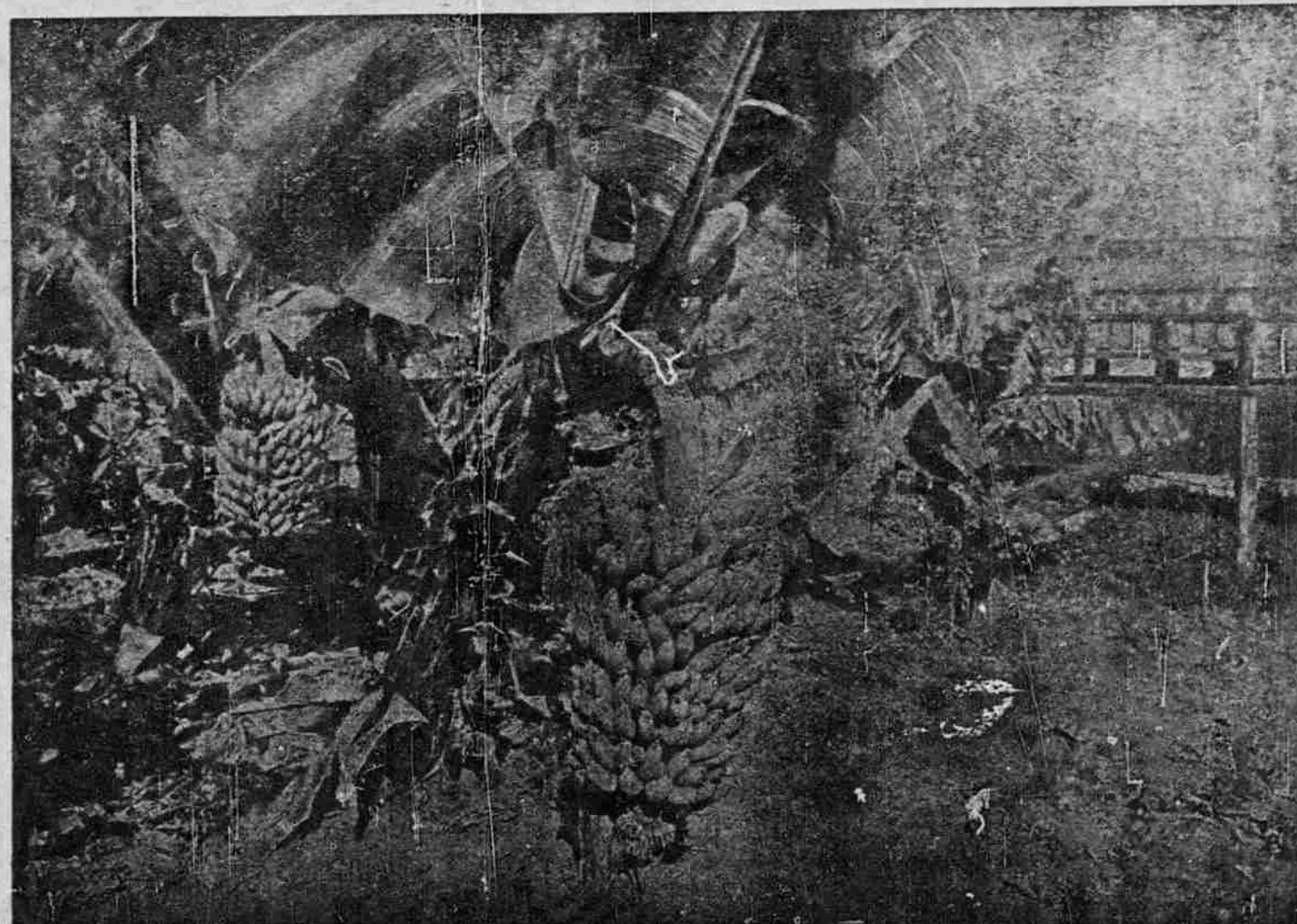
10. Climate excellent throughout the Islands. There is little, if any fever, except in low swamp land.

11. Yearly rainfall varies according to locality and elevation. In some districts, bananas are grown by means of irrigation, where the rainfall is less than twenty inches a year. The average rainfall in the Hilo and Oiaa banana districts runs about 100 to 125 inches per annum.

12. There are some swamp areas near the shore line, but these are usually small, and if valuable are already planted in bananas, rice, or taro, and are held at a high price. Spaces in sheltered valleys are usually of small extent.

13. It is doubtful if suitable land to any considerable amount can be had on the island of Oahu, though there are some lands that could be purchased, but would require irrigation, and would be held at not less than \$100 per acre.

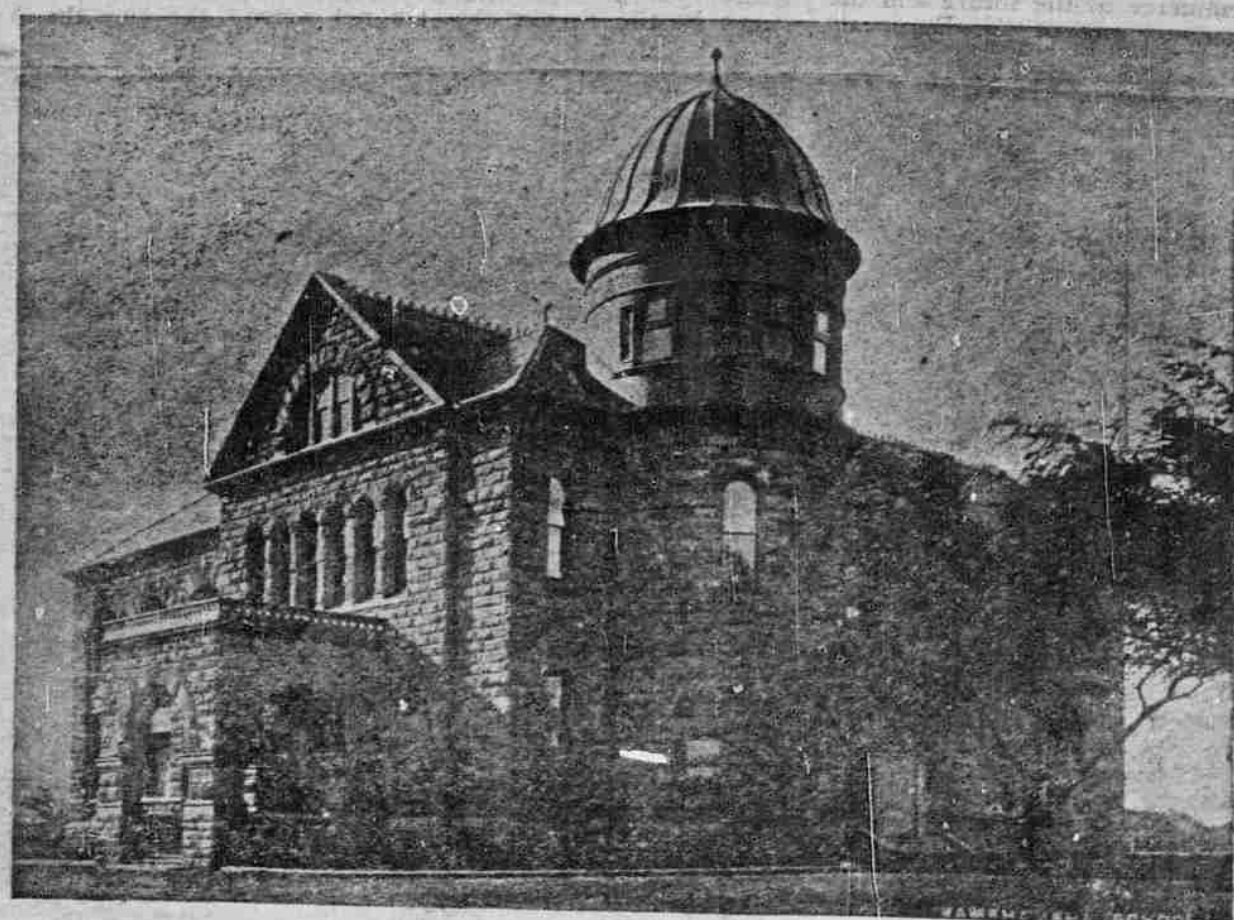
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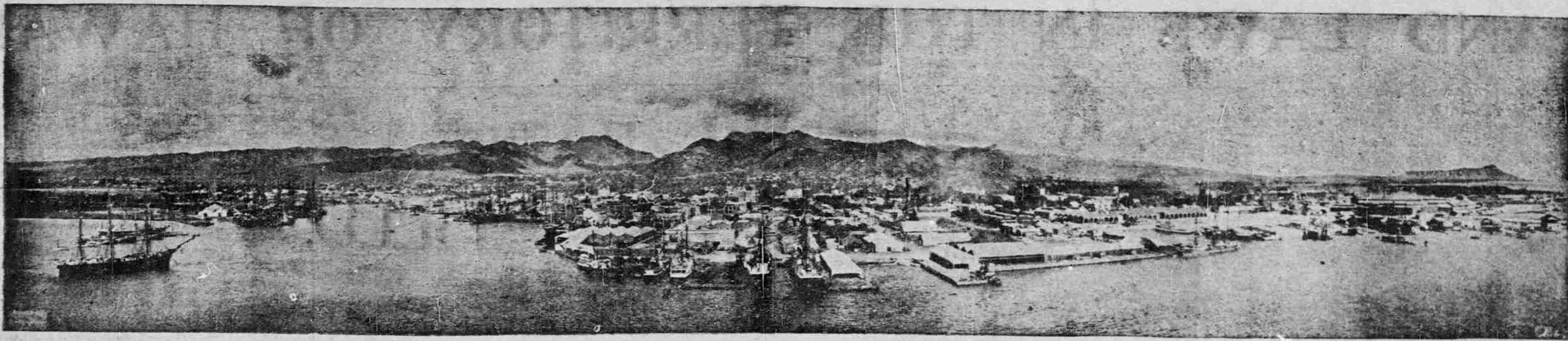
BANANA TREE.



HONOLULU HIGH SCHOOL, ONCE A PALACE.



KAMEHAMEHA BOYS' SCHOOL.



HONOLULU FROM ITS FRONT DOOR.

Fortification Plans

Fort at Puuloa.
Fort at Barber's Point.
Battery at Old Waikiki.
Battery Near Lighthouse, Diamond Head.
Battery at Niu.
Mortar Battery at Home for Incubables.
Battery at Waianae Gap.
Platform for Field Battery at Pali.

According to high military authority, those are the sites for fortifications in and about Honolulu which the government of the United States desires to secure in order that the island of Oahu may be transformed into the Malta of the Pacific.

Of these sites, the property at Puuloa has already been bought and paid for. That is the site for one of the forts that is to be used in the defense of Pearl Harbor. The Waianae Gap property has also been purchased, although the purchase price has not been paid. The money to pay for this property is, however, in Honolulu, and will be turned over as soon as some slight defects in the title have been explained away.

And when the chain of fortifications

in Asia, on the shortest line between Japan and Europe should it ever come that Japan will want to play the part of a world power, past the gate of Oahu there must pour the commerce of the world and close by the forts on Oahu must lie the warpath of the navies of the nations.

The power that holds Oahu, and holds it strongly, will be the power that commands the North Pacific—and, the power that holds the key to naval supremacy of the greater sea. That this fact is appreciated by the government of the United States is becoming more and more apparent with each passing day. In a greater way to the Pacific, Oahu must be what Malta is to the Mediterranean. Because Napoleon could not dislodge England from Malta, the man who had conquered the continent of Europe was overcome at last by the persistent enmity of Great Britain. So much does the strength of the fortifications of Oahu mean to the greater America of the future that there is no far-seeing statesman of any party in the United States today who would put a straw in the way of the plans of the administration to fortify this island strongly and effectively.

Honolulu, as it stands in mid-Pacific, is almost two thousand miles from the nearest mainland coast. It is more than twice that distance from the mainland coast of any powerful nation that can by any chance become unfriendly to the United States—and that would have the power to wage effective warfare against

possibilities. Even a landing upon one of the other islands, if that were practicable, would not put the attacking power in a position to endanger the American stronghold in the Pacific.

In the first place, to successfully attack fortified Oahu, the hostile force must be conveyed from the nearest stronghold of any foreign power. The fleet must be maintained and, if any power were mad enough to send a military expedition along with the first fleet, the transports must be guarded. There is no harbor on Oahu where a large fleet could shelter and land, save at Honolulu or Pearl Harbor. Landing on the windward side would be dangerous—and, given that a force were landed there, it must be a tremendously heavy force, with tremendously heavy guns, to force the fortifications at the Pali or at Waianae Gap. It must drag its siege guns and must itself march across country that is all but inaccessible—and it must keep up a line of communication across thousands of miles of deep sea.

But there is no power on earth that would be so mad as to make an attempt like that. The American fleet in the Pacific would be strong enough to meet and destroy the force before it ever came in sight of Honolulu, let it come from what direction it would. The first attempt upon Oahu, if a first attempt even were made, would be a naval force exclusively. The enemy would try to do, as Admiral Dewey did in Manila bay. The American power must first be captured or destroyed before any power, even Japan, would attempt to send a land force to occupy these islands.

And, while Spain was 16,000 miles from Manila, and in no shape to reinforce the fleet and garrison there if they had been closer to the home base, Honolulu is but 2,000 miles from San Francisco, and the American might in men and money is beyond calculation. Of course, with the building of new forts in and around Honolulu, the naval force here will be greatly strengthened also. The North Pacific squadron will always be within call, closer to Honolulu than the fleet of any hostile

The hostile force that has been landed, say on Hawaii, in the meantime, must be fed and clothed and guarded against disease. It is an open military secret that it is a far more grave problem to feed an army in the field than to win victories with it. This army of occupation, thousands of miles from its base and with the wide seas between, would be doubly hard to feed. For the country of occupation would subsist it but a short time. Added to that, its transports must be kept coming and going, and even if the American squadron of battleships had been destroyed, or if it had been bottled up in Honolulu by the attacking fleet, there would still be American cruisers on the seas to harry the transports and make their coming and going without a large squadron of

per month; from Hilo, 3500 to 4500 bunches per month, increasing; from Kahului, 1000 to 1500 bunches per month, recently started.

17. It is unlikely that a banana planter could at present obtain employment here as superintendent of a banana plantation. Any opening would have to be made by the settler himself. We would recommend to you a personal inspection of the field.

Hoping that we have satisfactorily covered your inquiries, we are,
Yours very truly,
C. S. HOLLOWAY.

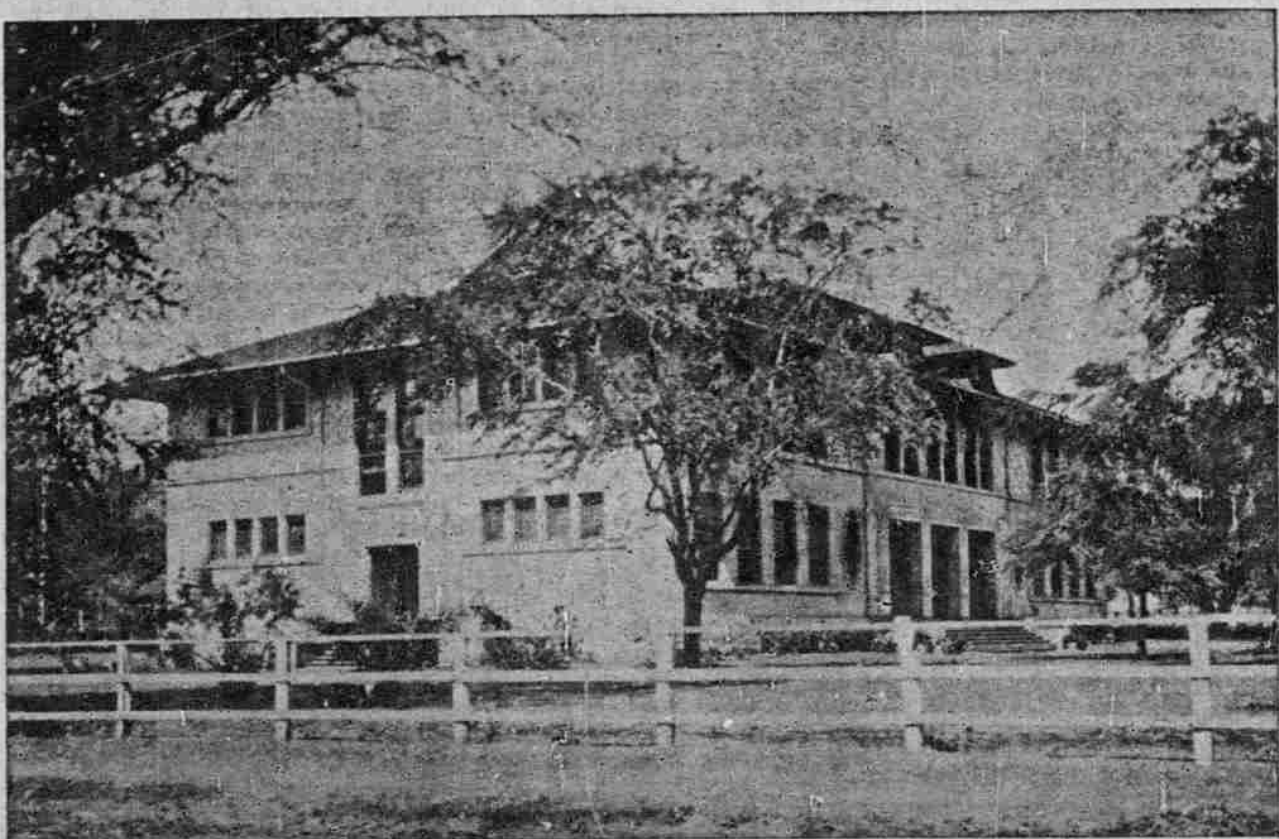
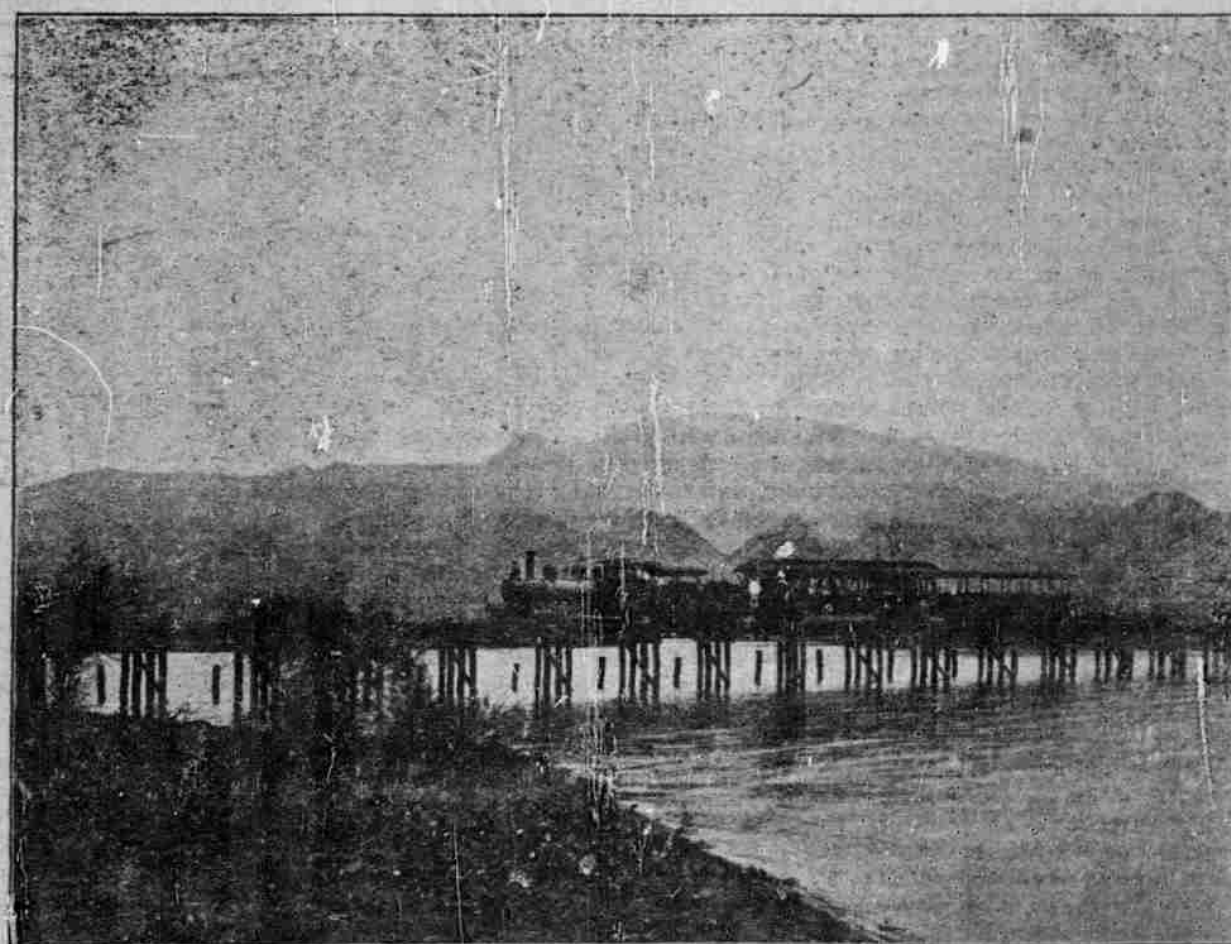
The same letter as that answered by Mr. Holloway drew from the Commissioner of Public Lands this response:
Dear Sir: Yours of the 9th inst re-

I suppose this answer will be very unsatisfactory to you, but it is the best I can do under the circumstances.

Very truly yours,

JAMES W. PRATT,
Commissioner of Public Lands.

It will be seen that in the view of all experts there is no good reason why the culture of the banana should not become, and at once, one of the principal sources of wealth for these islands. In fact, the Hilo experiment—which, in the way, is no longer an experiment—has shown that the thing can be done, and successfully done, and that in spite of conditions that are the reverse of favorable to the shipper. The steamship Enterprise, plying between the port of Hilo, on the Island of Hawaii,



KAAHUMANU PUBLIC SCHOOL.

thus outlined has been completed, it will take a stronger naval force to reduce Honolulu than any power so far has been able to put in the Pacific Ocean. It is doubtful, indeed, whether even England, mauler her strong force at Esquimaux, could do it—and it is becoming more and more apparent as the years go by that England will never try.

The island of Oahu, after the Panama canal shall have been completed, will hold the strategic center of the stage in the North Pacific. On the shortest line between the American possessions on the Isthmus and in the Far East, on the shortest line between the canal that is to open the ocean of the future to the commerce of the future and the possessions of any of the European powers

America on land or sea. It is more than two thousand miles from the nearest German possessions—and men who read the future of the nations have declared that Germany is the only power whose pretensions in the Pacific America will ever have need to fear. It is twice two thousand miles, and more, from Russia or Japanese territory—and both Russia and Japan have such present troubles of their own that they may be counted out of the calculation for the moment.

Honolulu, as it stands strategically, must be made strong enough to resist attack by sea—and then there need be no worry over possible attack by land. Attack by land, in fact, if the forts and the fleet here be strong enough to hold a hostile fleet at bay, is not among the

power can possibly be should war impend and the islands be endangered.

Conceding the possibility, however, of the landing of a hostile force on one of the other islands, it must be kept in waiting for the reduction of Honolulu. The town, when the chain of forts that it is proposed to build are completed, will be next to impossible to capture by sea assault—and, of course, will be largely garrisoned and amply provisioned. The United States government takes nobody into its confidence relative to the strength of the forts it is proposed to build here, but they will be furnished with the most modern guns of the largest calibre. An attacking fleet must stand far outside to escape their fire—and even then will not escape. For the Yankees are good gunners.

guard impossible. If every American warship in the Pacific were to be destroyed it would not be many months before the iron works at San Francisco had turned out at least a dozen more for that service. Fast merchantmen, bought and manned and armed, would suffice.

The problem of an attack upon armed Honolulu would be a difficult one for any power. The problem of a land attack would be a problem that could not be solved. Literally, it would be to achieve the impossible.

It will be seen, from this, what is meant when the United States announces its purpose to fortify Oahu so strongly. It is the chief outpost of the mighty growing American power. It will be, when the plans of fortification have been carried out, the most important American stronghold in the Pacific. The power that holds Oahu will hold the key to the ocean of the future. America does not propose to lose the key.

BANANAS IN HAWAII

(Continued from Page 4.)

14. As previously stated, further information in regard to Government lands will be forwarded to you from the Land Office.

15. There are no large syndicates now engaged in the banana business. Most of the fruit is grown by Chinese lessees of small holdings, who sell their fruit to two or three buyers in Honolulu. The latter make the shipments. A number of Americans are raising bananas in the vicinity of Hilo.

16. At present the shipments of bananas are approximately as follows: From Honolulu, 15,000 to 20,000 bunches

received and I hardly know how to answer same. If I only knew to what extent this party desired to go into the banana business I would give a more definite answer to his inquiry. You of course know that the lands above Hilo are producing a fine crop of bananas, but the growers appear to be at the mercy of the California Fruit Growers' Union (I think that is their title), and I am told that these California people handle the market to suit themselves and that the Hawaiian banana grower must take their prices or, if the shipment is of any extent, go outside of the State for a market.

We have many leases falling in soon, all along the Hamakua coast, and so will have much land available for banana culture. The value of the land runs from \$4 per acre for land not cleared, to \$100 or \$125 per acre for land that has been cleared.

The cost of clearing averages about \$80 per acre. This land can be taken up under the various conditions of our law, the amount being 400 acres on time payment and 1000 acres on cash sales. However, you are familiar with our laws and I need not repeat the conditions.

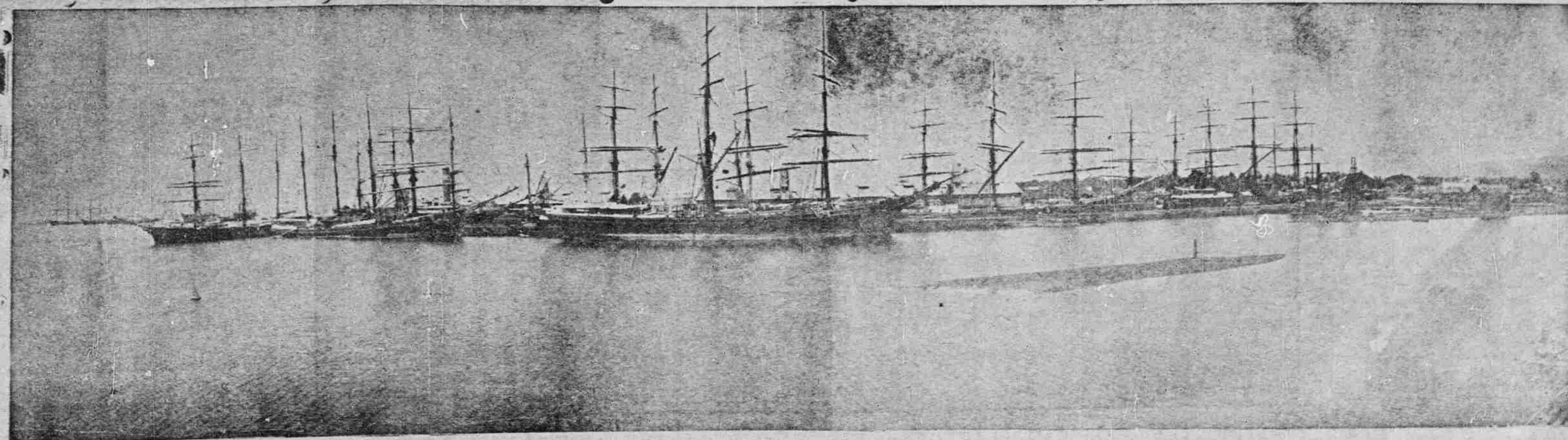
We have smaller patches or remnants at various places about the islands that would grow fine bananas—for instance, I hope to open up several hundred acres in Palolo valley, but in this case I would like to settle this land in small portions, just enough for the ordinary family to handle. You see I am back to the fact that I don't know how much your correspondent wants to handle. I find this difficulty with nearly all those who inquire about our lands—a man wants to go into the cattle business, another wants land to support angora goats, another to raise coffee or pines, and I always have to ask them how much land they can handle before I can give them location and prices.

and the mainland, began carrying bananas to San Francisco a little more than two years ago. It was admitted at the time that this was an experiment, although why it should have been considered experimental is not clear. The Hawaiian bananas are at least as good as any that are raised anywhere else in the world, and the shipment of bananas, even upon comparatively slow steamers, has always been successfully carried on. The bulk of the fruit that is consumed in the United States is shipped by steamer from Bluefields to New Orleans, an ocean voyage about as long as from Hawaii, and then distributed by rail to the consumers all over the States.

Experiment or not, the Enterprise carried on her first trip up from Hilo between 400 and 600 bunches of bananas. The shipment reached the coast in good condition and the increase in the trade has been steady from that time to this. On her last trip up the Enterprise carried anywhere from six to eight thousand bunches of the fruit, which found a ready market upon arrival.

And the Enterprise cannot carry all the fruit that is raised at and around Hilo. The steamer makes but one round trip per month, and the trip from Hilo to San Francisco requires ten days actual sailing time. If boats ran twice a month it is estimated by experts that the shipments would be practically doubled, as many bunches now reach the picking stage between shipments, and are of course useless for shipment by the time the vessel returns. Also, it would be a great advantage to the shippers if a faster boat were put on the run. As it is now between twelve and fourteen days elapse between the cutting and the sale of the fruit, and of course it would be in better condition if it reached the consumer earlier. These, however, are minor difficulties.

(Continued on page 7.)



A SECTION OF A MIGHTY COMMERCE.

LAND LAWS IN THE TERRITORY OF HAWAII

It is proper to preface the story of the land laws of Hawaii, which are peculiar to the Territory, with a brief history of how the laws came to be as they are. Writing on this topic, Land Commissioner Pratt says:

The original group of the Hawaiian Islands consisted of Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, Niihau, together with a number of very small adjacent points of land which are known as separate islands, but which amount to nothing unless taken in conjunction with the larger lands. Within late years other small islands in the chain extending to the north and west from the main group have become, by annexation, a part of what is now known as the Territory of Hawaii. The main group is situated between 19 and 23 degrees north of the equator, and is about 2,000 miles west of the Pacific coast of America. This is exactly the same position north held by Cuba.

The combined area of the Hawaiian Islands is about 6,500 square miles, divided as follows as to the larger islands:

	Sq. miles.
Hawaii	4,015
Maui	728
Oahu	600
Kauai	544
Molokai	261
Lanai	135
Niihau	97
Kahoolawe	69

The largest island, Hawaii, is about the size of the State of Connecticut, and the combined group about equals the area of New Jersey.

Prior to 1830 absolute ownership and control of all lands vested in the King. In 1839 and 1840 an attempt was made to pass a law that would give some title to occupants of lands, but the law appears to have proved a failure, for conditions remained practically the same until 1846, when a law was passed authorizing the organizing of a commission to take evidence as to occupancy and to award, to those entitled to receive the same, the lands in fee. This division, or mahele, of the lands took place March 7, 1848, at which time a portion of the land was reserved by the King as a private property of the Crown, a portion allotted to the chiefs and a portion to the people. On the 8th day of March, 1848, the King conveyed a large portion of all the lands, that he had retained at the division of the previous day, to the Government. The commission awarded ownership on over 11,000 claims, mostly of very small area. The result of this division of the lands was about as follows:

	Acres.
The Crown	1,100,000
The Government	1,413,000
The chiefs and the people	1,647,000
A total	4,160,000

This ownership applied mostly to Hawaiians, as by the laws of 1850 and 1854 foreigners were practically prohibited from ownership in lands, except under special conditions and circumstances.

Immediately following the division, or mahele, the Government commenced to sell and lease its lands in large tracts in order to replenish an empty treasury. Naturally the best lands went first, as the portions remaining being of the inferior class. The value of the remainder has decreased until at the present time the government lands are great in area but of the smallest value, tens of thousands of acres being barren lava, upon which not a bit of vegetation has grown from fifty to one hundred years. The result is that by far the largest portion of the islands depended on for sites for homesteads and revenue-producing purposes is now the land formerly known as the Crown lands.

By an act of the legislature approved January 3, 1865, the Crown lands were rendered inalienable, and the commissioners were allowed to lease the lands for periods of not more than thirty years. This act was framed apparently to safeguard the revenues from the land and to prevent the commissioners from selling them off in any sized tracts and at any price, as the Government lands were sold.

By an act of 1874 the minister of the interior was allowed to sell, lease, or otherwise dispose of Government lands in such manner as he might deem best. This act was amended in 1876 and 1878 by making it mandatory to sell or lease only at public auction, after advertising for at least thirty days.

By an act approved August 29, 1881, the minister of the interior was allowed to issue five-year homestead leases on lots of not less than 2 and not more than 20 acres, the lands to be appraised and the annual rental to be equal to 10 per cent of the appraised value of the land; residence and fencing required and payment of principal within five years, failing which the lands reverted to the Government.

By an act approved September 6, 1888, the above act was amended to allow lands in Kahikini and Kipahulu, Maui, and in Kona and Puna, Hawaii, to be leased under the homestead act in tracts of not more than 100 acres. This act was again amended by act of November 14, 1890, and the term was made ten years and the annual rental reduced to 5 per cent of the appraised value.

The present land law was enacted by the legislature of the Republic of Hawaii on the 14th day of August, 1895, and with slight amendments continued in force by an act of Congress on the 27th day of April, 1900, and approved on the 30th day of April, 1900, by President McKinley. The following is a digest of our present land law:

DIGEST OF THE LAND ACT OF 1895.

(As continued in force by an act entitled "An act to provide a government for the Territory of Hawaii," passed by the Fifty-sixth Congress of the United States of America, on the 27th day of April, and approved on the 30th day of April, A. D. 1900.)

(With reference to unoccupied lands.) The land act of 1895, as aforesaid, having for its special object the settlement and cultivation of the government agricultural and pastoral land, vested the control and management of public lands in a commissioner.

For the purpose of the act, the Territory of Hawaii is divided into six land districts, as follows:

First. Hilo and Puna, on the island of Hawaii.

Second. Hamakua and Kohala, on the island of Hawaii.

Third. Kona and Kau, on the island of Hawaii.

Fourth. The islands of Maui, Molokai, Lanai, and Kahoolawe.

Fifth. The island of Oahu.

Sixth. The island of Kauai.

The commissioner is represented by a subagent in each district.

Public lands for the purposes of this act are classified as follows:

1. **Agricultural lands.**—First class: Land suitable for the cultivation of fruit, coffee, sugar, or other perennial crops, with or without irrigation.

Second class: Land suitable for the cultivation of annual crops only.

Third class: Wet lands such as kalo and rice lands.

2. **Pastoral land.**—First class: Land not in the description of agricultural land, but capable of carrying live stock the year through.

Second class: Land capable of carrying live stock only part of the year, or otherwise inferior to first-class pastoral land.

3. **Pastoral-agricultural land.**—Land adapted in part for pasturage and in part for cultivation.

4. **Forest land.**—Land producing forest trees, but unsuitable for cultivation.

5. **Waste land.**—Land not included in other classes.

The act provided three principal methods for the acquisition of public lands, under systems known as (1) homestead lease, (2) right of purchase lease, (3) cash freehold.

GENERAL QUALIFICATIONS OF APPLICANTS.

Applicants for land under systems named above must be over 18 years of age, must be citizens by birth or naturalization or have received a certificate of declaration of intention to become a citizen, be under no civil disability for any offense, nor delinquent in the payment of taxes. Special qualifications are named under the respective systems.

HOMESTEAD-LEASE SYSTEM.

The homestead-lease system permits the acquisition of public land by qualified persons without other payments than a fee of \$2 upon application and a fee of \$5 upon issuance of homestead lease.

The limit of area in the different classes of land which may be acquired under homestead lease is 8 acres first-class agricultural land; 10 acres second-class agricultural land; 1 acre wet (rice or kalo) land; 20 acres first-class pastoral land; 60 acres second-class pastoral land; 45 acres pastoral-agricultural land.

SPECIAL QUALIFICATIONS OF APPLICANTS FOR HOMESTEAD LEASE.

Any person having the general qualifications (as to citizenship, etc.), who is not the owner in his own right of any

land in the Territory of Hawaii, other than "wet land" (rice, taro, etc.), and who is not an applicant for other land under this act, may apply under this part of the act, and such application may cover one lot of wet land in addition to other land, if reasonably near. Husband and wife may not both be applicants.

Applications must be made in person at the office of subagents of the district, accompanied by sworn declaration of qualifications and a fee of \$2.

CERTIFICATE OF OCCUPATION.

The successful applicant receives a certificate of occupation which entitles him to occupy the described premises and to receive a homestead lease for nine hundred and ninety-nine years, if conditions of certificate of occupation have been fulfilled, the conditions being:

That the occupier shall, before the end of two years, build a dwelling house and reside on the premises. He shall maintain his home on the premises from and after the end of two years from date of certificate. He shall before the end of six years from date of certificate have in cultivation not less than 10 per cent of the land, or have in cultivation 5 per cent of the land and, in good growing condition, not less than ten timber, shade, or fruit trees per acre on agricultural land, or if pastoral land, fence the same within six years.

He shall pay the taxes assessed upon the premises within sixty days after the same are delinquent.

He shall perform any conditions of the certificate for the planting or protection of trees, or preservation or destruction of vegetable pests that may be on the premises.

CONDITIONS OF HOMESTEAD LEASE.

The lessee or his successors must maintain his home on the leased premises, must pay the taxes assessed upon the premises within sixty days after the same are delinquent, and perform any condition of the lease relating to protection or planting of trees, or destruction or prevention of vegetable pests.

Lands held under a certificate of occupation or homestead lease are liable to taxation as estates in fee.

In case of the death of an occupier or lessee his interests, notwithstanding any devise or bequest, shall vest in his relations, in the order prescribed in the act, the widow or widower, being first in order, then the children, etc.

Certificate of occupation or homestead lease, or any interest thereunder, is not assignable by way of mortgage, levy or sale on any process issuing from the courts of the country. Neither the whole nor any portion of the premises may be sublet.

Surrender may be made to the government by an occupier or lessee having the whole interest if all conditions to date of surrender have been fulfilled, and the person surrendering is entitled to receive from the government the value of permanent improvement, when-

ever the same is received by the government from a new tenant.

RIGHT OF PURCHASE LEASES.

Right of purchase leases, for the term of twenty-one years, may be issued to qualified applicants, with the privilege to the lessee of purchasing at the end of three years and upon the fulfillment of special conditions.

QUALIFICATION OF APPLICANTS.

Any person who is over 18 years of age, who is a citizen by birth or naturalization of the United States, or who has received a certificate of declaration of intention to become a citizen, who is under no civil disability for any offense, who is not delinquent in the payment of taxes, and who does not own any agricultural or pastoral lands, in the Territory of Hawaii, may apply for right of purchase lease, the limit of areas which may be acquired being 100 acres first-class agricultural land, 200 acres second-class agricultural land, 2 acres wet (rice or taro) land, 600 acres first-class pastoral land, 1,200 acres second-class pastoral land, 400 acres mixed agricultural and pastoral land.

Any qualified person, owning less than the respective amounts in the foregoing list, and which is not subject to residence conditions, may acquire additional land of the classes already held by him, but so that his aggregate holding shall not be in excess of the limit named; or if desiring additional land of another class may acquire the same according to ratio established between the various classes.

Husband and wife may not be applicants for right of purchase leases.

Application must be made in person at the office of the subagent of the district, and must be accompanied by a fee equal to six months' rent of premises, fee to be credited on account of rent, if application is successful. In case of more than one application for same lot the first application takes precedence.

CONDITIONS OF RIGHT OF PURCHASE LEASE.

Term: Twenty-one years.

Rental: Eight per cent on the appraised value given in lease, payable semiannually.

The lessee must from the end of the first to the end of the fifth year continuously maintain his home on the leased premises.

The lessee must have in cultivation at the end of three years 5 per cent and at the end of five years 10 per cent of his holdings, and maintain on agricultural land an average of ten trees to the acre.

Pastoral land must be fenced.

Interest in right of purchase lease is not assignable without written consent of the commissioner of public lands, but the lease may be surrendered to the government.

In case of forfeiture or surrender of right of purchase lease, reappraisal is made of the land and of permanent improvements thereon, and if the land is again disposed of, the incoming ten-

ant shall pay for such permanent improvements and the amount when so received by the government shall be paid to the surrendering lessee.

CONDITIONS UNDER WHICH PURCHASE MAY BE MADE.

At any time after third year of leasehold term, the lessee is entitled to a land patent giving fee simple title, upon his payment of the appraised value set forth in lease, if he has reduced to cultivation 25 per cent of his leased premises and has substantially performed all other conditions of his lease.

CASH FREEHOLDS.

Cash freehold lots are sold at auction to the highest qualified bidder, at appraised value as upset price.

The qualifications of applicant for cash freeholds and the areas of land which may be acquired are the same as those under right-of-purchase system.

APPLICATIONS.

Applications must be made to subagent of district in writing, with sworn declaration as to qualifications and a fee of 10 per cent of appraised value of lot, which fee is forfeited if applicant declines to take the premises at the appraised value, and is credited to him if he becomes the purchaser of the lot. If such applicant, however, is outbid, his fee is returned to him.

If two or more applications are made and there is no bid above the upset price the first application takes precedence.

The purchaser at auction sale must pay immediately thereafter one-fourth of purchase price and thereupon receive a "freehold agreement."

CONDITIONS OF FREEHOLD AGREEMENT.

The freeholder shall pay the balance of purchase price in equal installments in one, two, and three years, with interest at 6 per cent, but may pay any installment before it is due, and stop corresponding interest.

Twenty-five per cent of agricultural land must be cultivated and pastoral fenced before the end of third year.

Freeholder must maintain his home on the premises from the end of first to end of third year.

He may not assign or sublet without consent of the commissioner of public lands.

He must allow agents of the Territory of Hawaii and the United States to enter and examine the premises.

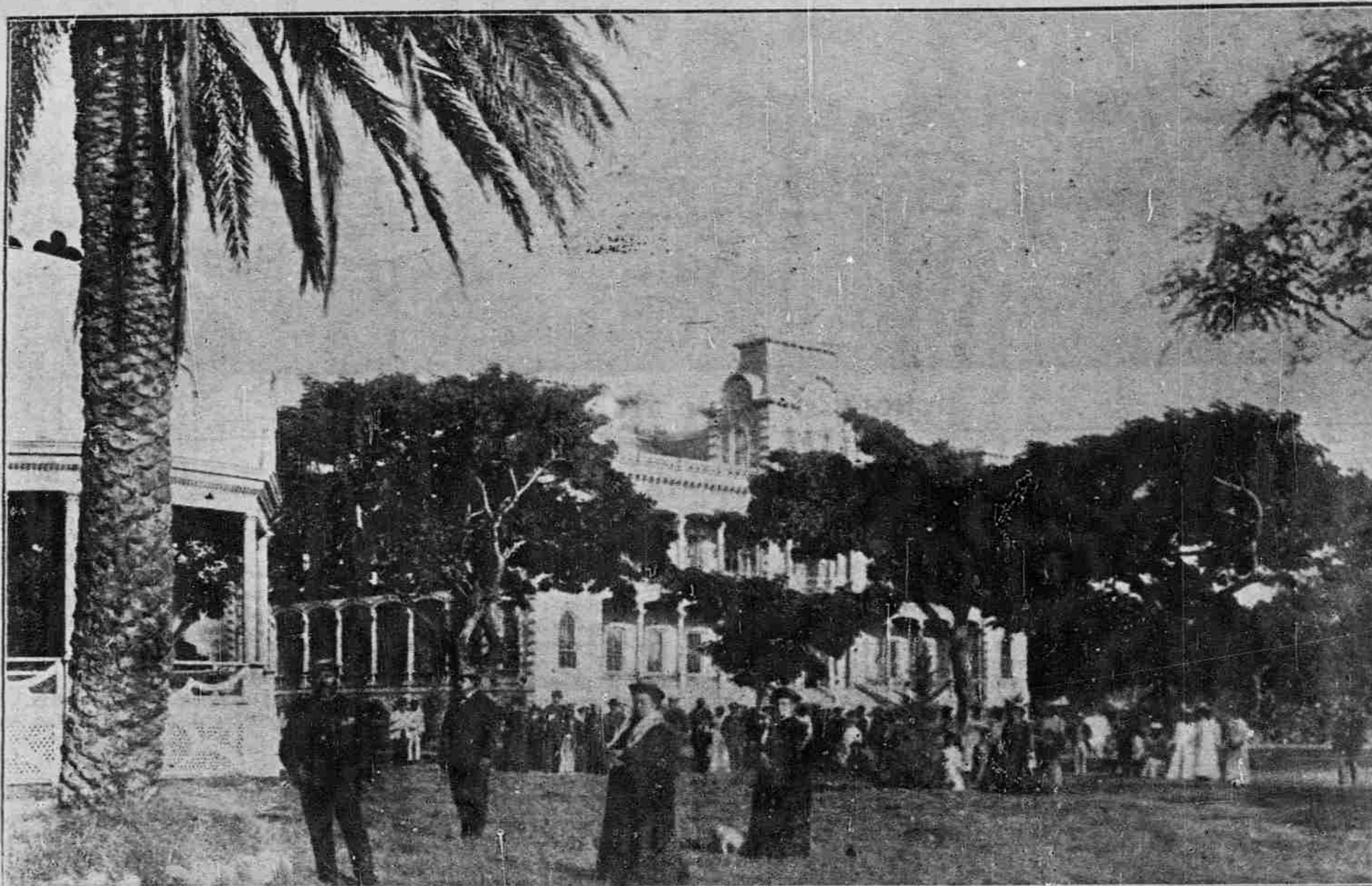
He must pay all taxes that may be due upon the premises.

If all conditions are fulfilled, he is entitled at end of three years to patent giving fee-simple title.

In case of forfeiture or surrender, the land and permanent improvements are reappraised separately, and the value of such improvements, when received by government from new tenant or freeholder, will be paid to surrendering freeholder.

SETTLEMENT ASSOCIATIONS.

Six or more qualified persons may form a "settlement association" and apply for holding in "one block."



KING KALAKAUA IN THE GROUNDS OF IOLANI PALACE.

The provisions for cash freehold and right-of-purchase leases apply to the settlement of such blocks.

Any lot in such block which may be forfeited or surrendered or which is not taken up by any member of the settlement association within three months, shall be open to any qualified applicants.

Disputes, disagreements, or misunderstandings between the parties to certificate of occupation, homestead lease, right-of-purchase lease, or cash freehold and relating thereto which can not be amicably settled shall be submitted to the circuit judge in whose jurisdiction the premises are situated, and his decision shall be final, subject only to appeal to supreme court.

CASH SALES AND SPECIAL AGREEMENTS.

With consent of the governor public lands not under lease may be sold in parcels of not over 1,000 acres at public auction for cash, and upon such sale and payment of full consideration a land patent will issue.

Parcels of land of not over 600 acres may, with consent of governor, be sold at public auction upon part credit and part cash, and upon such terms and conditions of improvement, residence, etc., as may be imposed.

Upon fulfillment of all conditions a land patent will issue.

GENERAL LEASES.

General leases of public lands may be made for a term not exceeding five years for agricultural land and twenty-one years for pastoral land.

Such leases are sold at public auction and require rent in advance quarterly, semiannually, or annually.

The condition of general leases are made at discretion of the commissioner and may be made for any class of public lands.

..SISAL..

About the year 1888 the commissioner of agriculture and forestry imported some 30,000 sisal plants from Florida. The favorable results of experimental work with them developed in the formation of the Hawaiian Fibre Company (Limited). This company leased land from the Oahu Railway and Land Company, situated on the coral plain between Pearl Lochs and the Waianae Mountains, in the Ewa district, where plants were set out on a commercial basis. The barren, thin soil of this locality has been shown to be just what is needed for sisal, and comparative tests made by the Tubbs Cordage Company, of San Francisco, have proven the Hawaiian sisal to be superior to the best Yucatan.

When first started the Hawaiian Fibre Company represented an investment of about \$37,000, but later, owing to the success of the enterprise, the superior quality of the fibre, and high price it commanded, the company increased its capitalization to \$75,000.

At the present time there are about 750 acres of land in sisal, and it is expected that the area of the plantation will shortly be considerably increased, if not doubled. Sisal is of slow growth, requiring four years before the first crop matures.

The possibilities for Hawaii in sisal cultivation are shown by the number of plantations started on the various islands. The most promising localities for the growth of sisal have been found to be the comparatively barren, dry soils of the leeward coasts. From the nature of the sisal plant, requiring but little moisture and little cultivation, there are hundreds, probably thousands, of acres of land with thin, stony soil, not suited for sugar cane, which can be utilized for sisal cultivation.

One of the largest plantations started on the other islands is the Knudsen plantation on Kauai. On Molokai and Maui considerable time and money have been spent in the introduction and cultivation of sisal. On Hawaii plantations have been started in the districts of Kona and Oahu, where the industry has become of considerable importance.

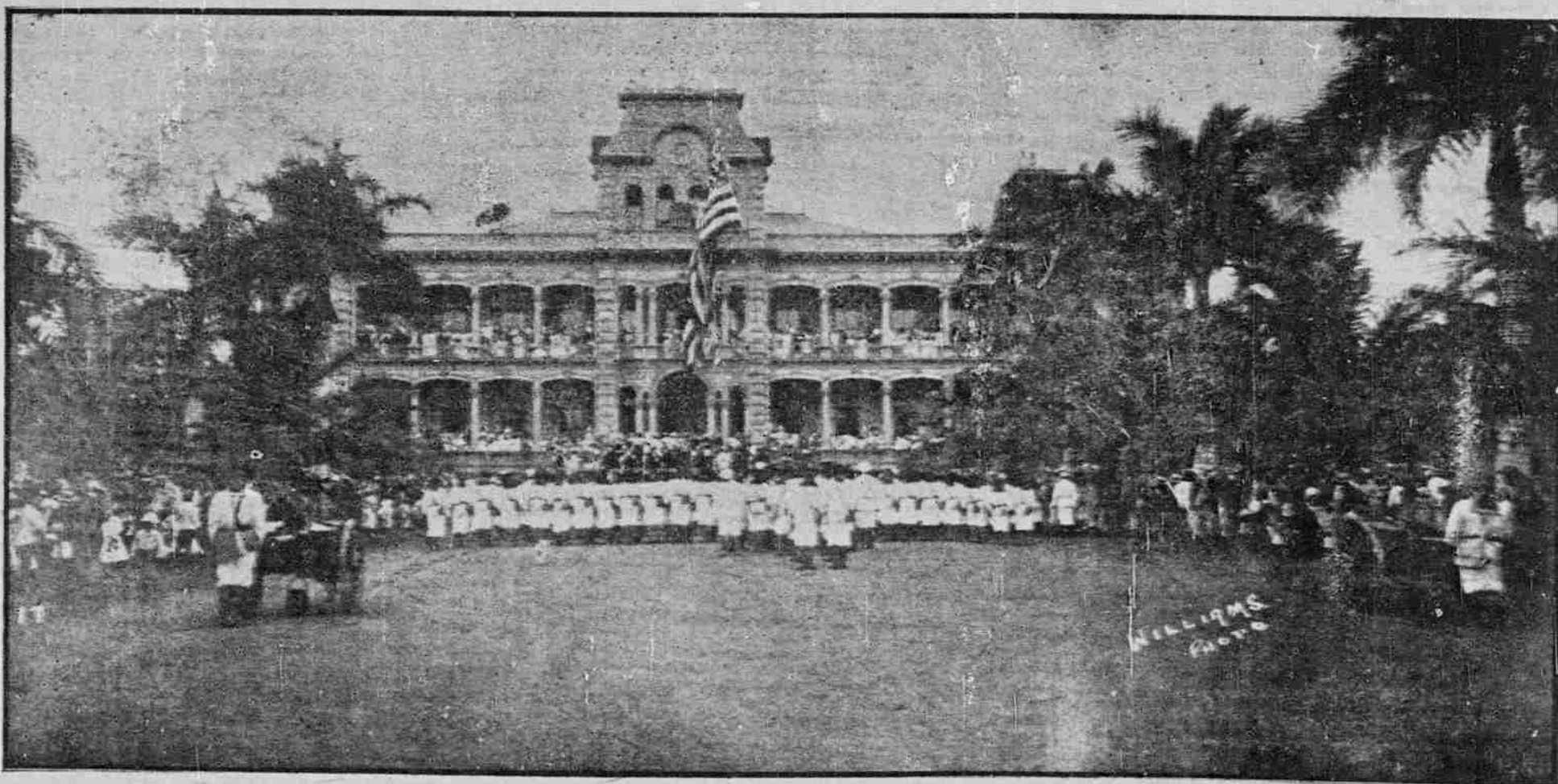
From the success of the Hawaiian Fibre Company and the condition of the industry on the other islands, it is safe to predict that the future of sisal in the Territory is now assured. As the islands have such large areas, at present mostly uncultivated, where the soil and climate are well adapted to its growth, and as it requires so little expenditure in cultivation and cleaning, owing to the superiority of the fibre over all others, except perhaps the Manila fibre, and the greater and greater demand for binding twine and cordage, the industry will be, as it now is, a profitable one, and the time is anticipated when sisal fibre will be one of the staple products of the Territory.

Picture postcards are subjected to stern censorship in some continental countries. In Russia those bearing the portrait of Tolstoi have been suppressed. Turkey forbids any postcard bearing the name of Allah or Mohammed or the portrait of a Mussulman. France will not permit the designer to ridicule the corpulence of the King of Portugal.

John L. Griffiths, to whose care the late President Benjamin Harrison left all his private papers, is reported to have discovered among them an extraordinary private document. This is nothing less important than an intimate history of the four years of the Harrison administration written by the president himself.

The youngest member of the house of commons is Viscount Turnour, who has just been elected to represent one of the Sussex divisions. He was 31 years old last April, is a conservative, and his family has long had association with the district where he won his parliamentary spurs.

Japan has 4,236 miles of railway, of which 210 miles were constructed in 1903. The number of passengers carried on these railways in 1903 exceeded 110,000,000; the freight transported was 16,122,671 metric tons, and the cash receipts amounted to about \$23,800,000.



HOISTING THE AMERICAN FLAG OVER THE PALACE AT THE ANNEXATION CEREMONIES, AUGUST 12, 1898.

Acclimation of Troops in Honolulu

The city of Honolulu is in line with the manifest destiny of the United States, in that it offers an ideal place for the acclimation of American troops destined for service in the tropical possessions of America. And this is true whether expansion is to take place to the southward of the present body of States, as has always been believed, or in tropical Asia, or in both directions, as now seems most probable.

The United States, as a result of the Spanish-American war and of the recent revolutionary movement in Panama, has indeed already entered upon and taken long strides along both these paths. When the Spanish-American war left the country in possession of the Philippine islands and of Porto Rico, with a reversionary interest in Cuba, it was seen by far-sighted men that a new day had dawned for America. It had become, in a day, a world power. And perhaps the world at large was more keenly alive to this fact even than the most far-sighted Americans were.

Americans saw it, at any rate, with sufficient clearness to induce Congress to pass laws for the increase of the regular army establishment of the nation. In fact, if these possessions acquired as a result of the Spanish war were to be held, it became incumbent upon the nation to provide troops to hold them. The Filipino outbreak was a sufficient demonstration of that truth, if any were needed. And the American people, when the question was put to them in the last appeal at the ballot box, decided that the Asiatic possessions were to be held.

Fortunately at the same time that the Philippines were acquired, the Hawaiian islands fell naturally into the possession of the United States. The climate of the Philippines, as everybody knows, is one particularly trying to men bred in the temperate zone. The American troops serving in the Philippines lost more men as a result of climatic disease than fell victim to the bullets of the combined forces of Spain and the insurgents.

The climate of Hawaii, on the other hand, is particularly agreeable to the physical system of men bred on the mainland of America. This has been proven to a demonstration, times out of number. It is a tropical climate, that of these islands, but the heat of the tropics is so tempered by the trade winds that men coming here from the mainland suffer less hardship than in any other spot in the same latitude in the world. Not only is the range of the thermometer here low, but the humidity is of such character that, while the climate is particularly humid, the rains have none of that peculiar sticky quality that make the rains of Manila and the country around there absolutely deadly to white men. You can be exposed to the Hawaiian rain without danger to health in the slightest degree, and the heat in the dry season is not the depressing heat of other places in the same latitude.

For this reason, the islands form an ideal place for the acclimatization of troops enlisted on the mainland for service in the tropics. It is to be the practice of the military authorities, as has been already announced, to rotate the service of the several regiments of the army, so that every enlisted man will, in the term of his enlistment, see service in every part of the American dominion—under the Arctic circle and in the equatorial countries.

Now, in breaking men enlisted in the temperate zone for service in the tropics, it would be more than folly, it would be almost criminal, to take them at once and without preparation into the deadly miasmatic swamps of Luzon or Panama. Panama, of course, must be counted in this connection, because when the Panama canal is built it will become incumbent—in fact, it has already become incumbent, upon the United States to police the canal zone, and that must be done by men, for the most part, enlisted in the United States. The canal zone on the Isthmus of Panama is perhaps the most deadly strip of country in the world. There is the home of the Chagres fever.

Admitting the folly of taking men out of the temperate zone and into the

tropics without preparation of some sort for the physical change, it will be seen that the project to establish an immense camp of acclimation at or near Honolulu, already known to have been favorably considered in high army circles, is one of the most sane propositions ever advanced on the part of the United States government. If the men who fought in Manila during the Spanish and Filipino wars had been, even in a measure, inured to life in the tropics, many a man who laid his bones in the swamps of Luzon would be living today—a unit of wealth to the nation.

It has been known, for a long time past, that this project was under consideration by the military authorities. A long time ago negotiations were entered into between representatives of the United States government and certain land owners of Honolulu for the purchase of a large tract of land on the Ewa side of the town, near Moanalua, for use as a great camp—a camp of acclimation, in other words. At this camp would be kept the regiments en route to Manila for service in the Philippines, the soldiers being kept here long enough to get them inured to a healthy tropical climate, to habituate their systems to heat, when it was argued that they would be better prepared to resist the pestilential heat of the swamps of the East India isles. The argument, and it was sound, was that the men would thus be broken in gradually to service in the tropics, and so would be able to resist tropical diseases better.

From this negotiation for land for a large camp, the projected military changes in Honolulu have been enlarged, as the American grasp of their own empire has grown, to a complete system of fortifications for the city, manned by a force sufficient to make this island the Malta of the Pacific—but the project of a camp of acclimatization has never been lost sight of. In fact, the troops that will garrison Oahu, after the forts are built, will be troops in transit largely, although the garrison will, of course, be kept up to full strength at all times.

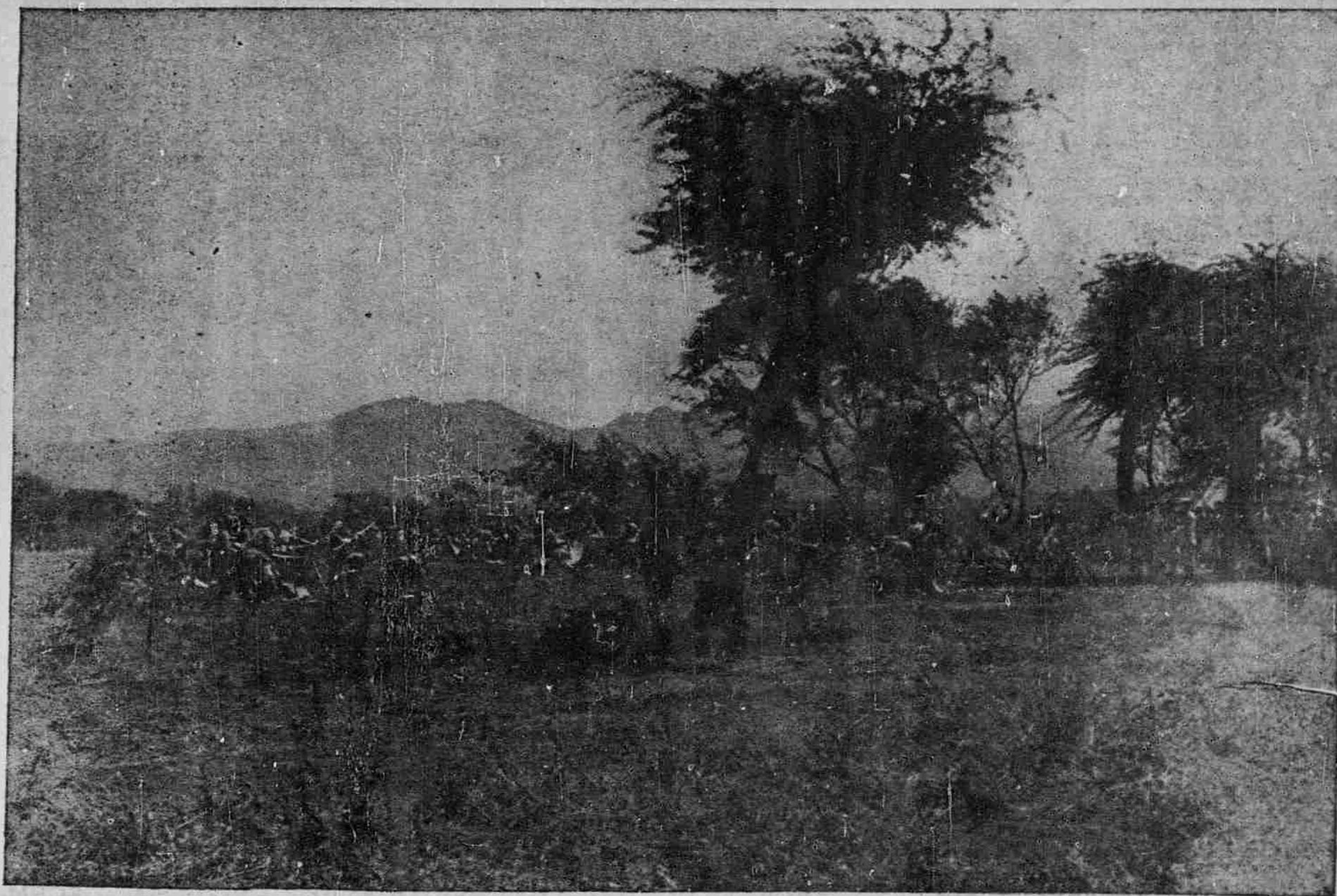
The enlisted men will get their first taste of tropical life here. From here they will be sent to Manila or Panama, as occasion demands—and, coming back from their service in the unhealthy tropics, they will be held here in a land of health until their strength has been recruited and their systems fully restored. The position of Honolulu for this purpose, is ideal. It is infinitely better than that of Porto Rico, also a healthful island, because the commerce

of the Pacific, in the first place is to be the commerce of the future—and because, secondly, Hawaii is directly on the shortest line between the mainland of the United States and Guam and Manila, and on the shortest line also between Panama and Guam and Manila. The position of Hawaii, in this regard, is the strategic position. The power that controls these islands will be the power that controls the North Pacific—a fact the military experts of the United States have not been slow to recognize.

Climatically, there could be no better place for a camp of acclimatization. Hawaii is in the tropics, without being tropically unhealthy. There is no malaria here, no deadly miasma, no jungle and no yellow fever. The island group, swept by the trade winds, are the abiding place of health. The troops kept here now are the healthiest in the entire army. And there is room here for half a million, if it should be desired to get so many fitted for tropical war or garrison duty.



CAMP MCKINLEY, THE LOCAL ARMY POST.



REGULARS ENCAMPED AT KAPIOLANI PARK.

BANANAS IN HAWAII

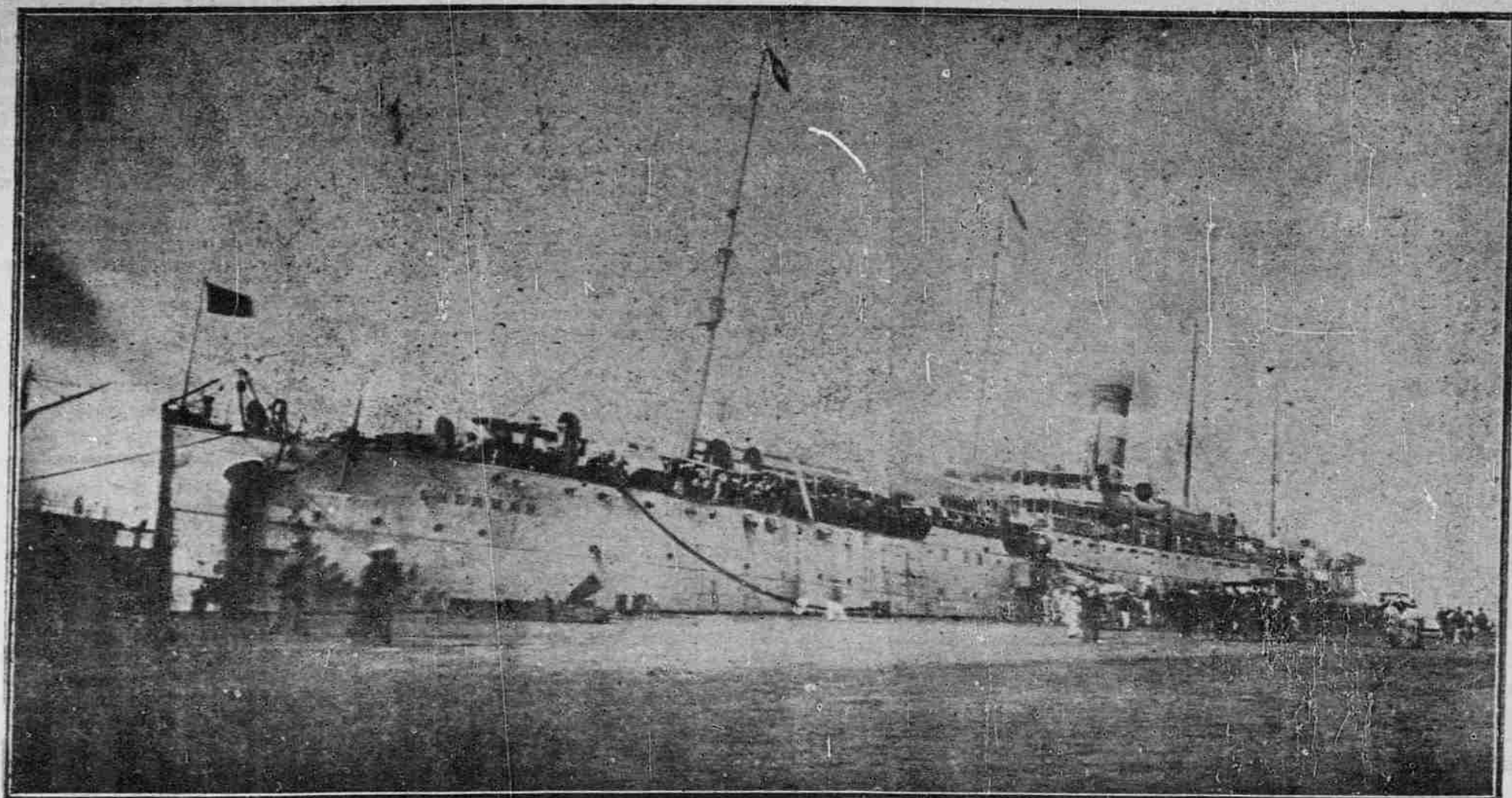
(Continued from page 5.)

and will correct themselves in time. There is no valid reason why the market of the whole Western United States should not be supplied with bananas from these Islands and when it is understood that the fruit is to be had here in sufficient quantity fast boats will come to carry it away. In that way the markets of London and New York are supplied from the West Indies and the markets of the West are as insistent as the markets of the East. Demand breeds supply.

The bananas shipped from Hilo are of good size, of the old Mission and Kihikihi varieties principally. It is found that

these kinds stand shipment better and make a more marketable article in the view of the buyer. These bananas stick to the bunch when ripe, ship and keep well, and the individual fruit fills out better than the fancy kinds.

On the whole the banana business is one of the most promising of all the horticultural side lines open to development in this Territory. The returns from the labor and capital put into the business are quick and certain and the yield per acre is very large. More than that, it does not require a large capital to engage in the business. Of course men with capital will get returns more quickly, but that is an advantage capital has in any enterprise. The comparatively poor man can likewise engage in banana culture, and if his returns be small at the start they will at least come quickly enough to meet his necessities—and there are few branches of horticulture, tropic or other, of which this is true.



ONE OF THE ARMY TRANSPORTS WHICH REGULARLY CALL HERE.



SUGAR MILL INTERIOR.

HISTORIC SCENES AT THE PALACE

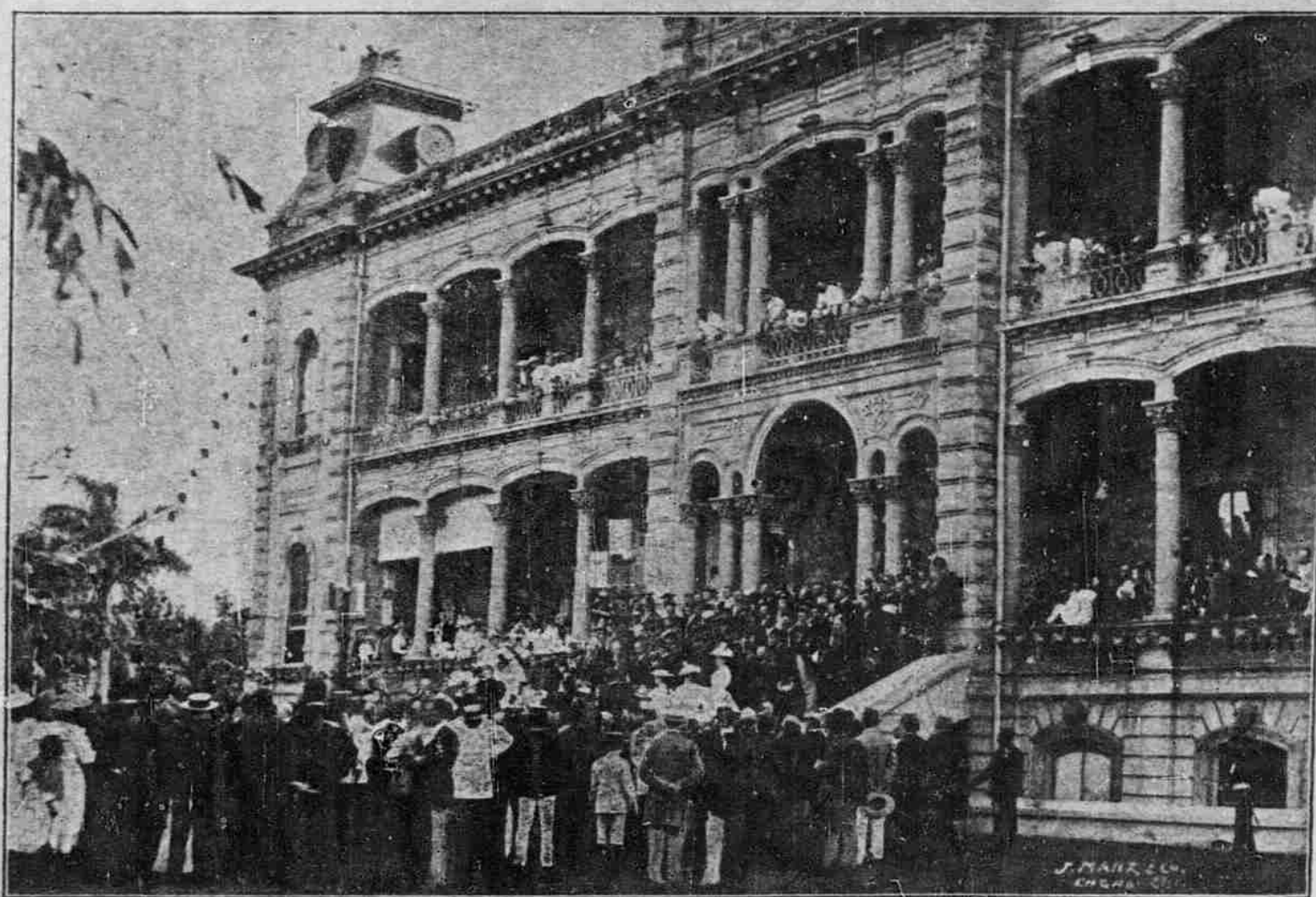
Views of the Historic Building During the Stirring Days of Monarchy, Republic and Territory.

Twenty-five years ago yesterday the corner stone of Iolani Palace, now the Executive Building, was laid with imposing ceremonies. Erected upon the lot where had stood the royal residences from the time when the seat of government was fixed at Honolulu, there is perhaps no building in the city with which is connected so much of the history of the islands. Its classic halls have been graced with all the pomp and splendor of royalty, princes and distinguished visitors have found welcome within its precincts. Here amid semi-barbaric splendor King Kalakaua placed the diadem upon his head and was declared monarch of the Hawaiian Islands, and in the grounds around the building many fete days have been celebrated.

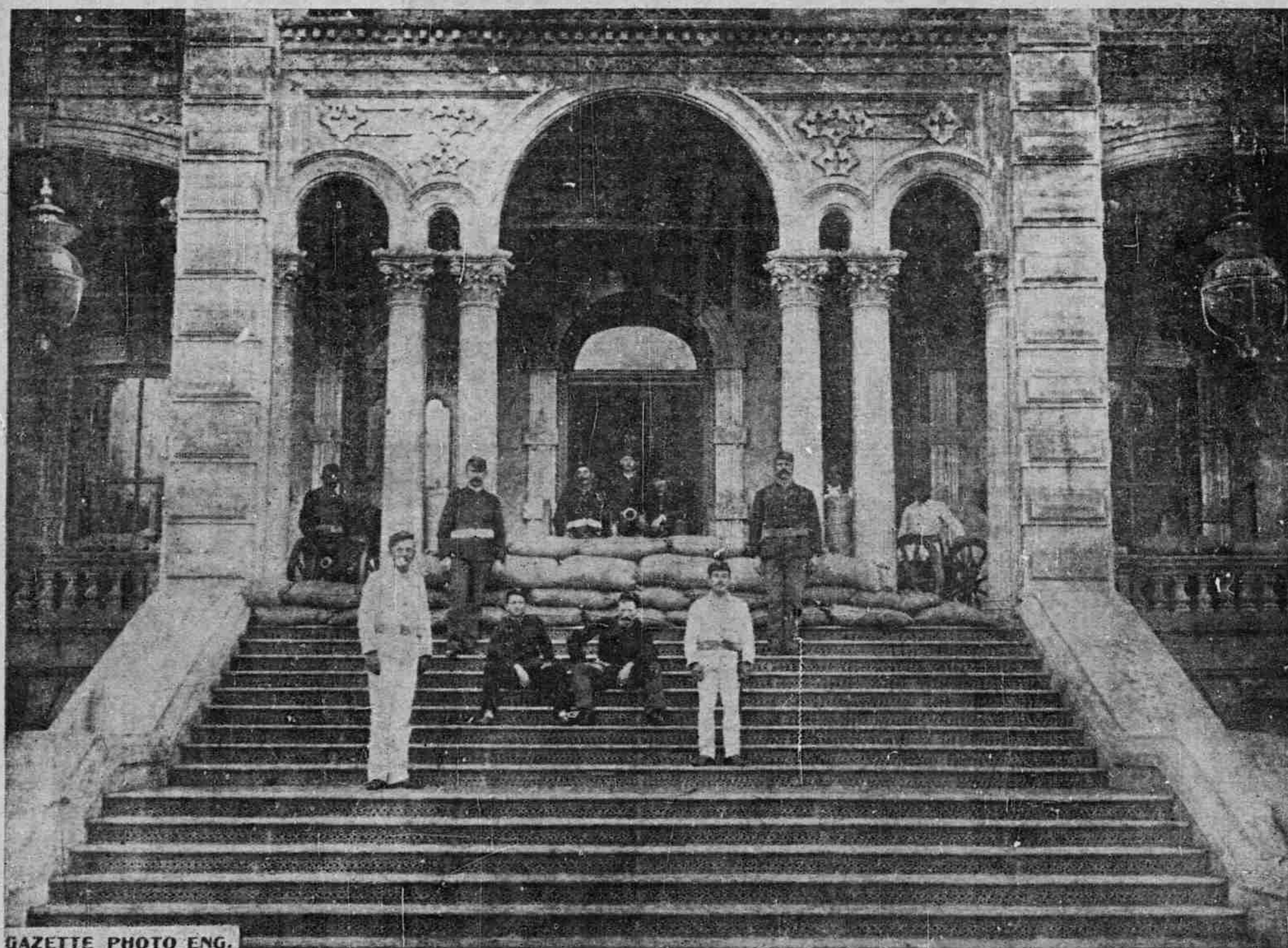
At other times the same building and the same ground have resounded with the alarms of war. The tramp of armed men has echoed through the arched corridors and the palace gates have bristled with cannon and flashing bayonets. From the steps of this building one memorable day in January 1893 Queen Liliuokalani spoke to her people the last word of a dying monarchy and here a few months later she returned a royal prisoner.

From these same steps a proclamation was read announcing to the world that a new republic had been born far out in the great Pacific, born to live its short and fleeting life and then like the butterfly to die, but in dying to make way for a new and better form of life under the Stars and Stripes. And it was at this same building that the formal transfer of sovereignty from the Republic of Hawaii to the United States was made.

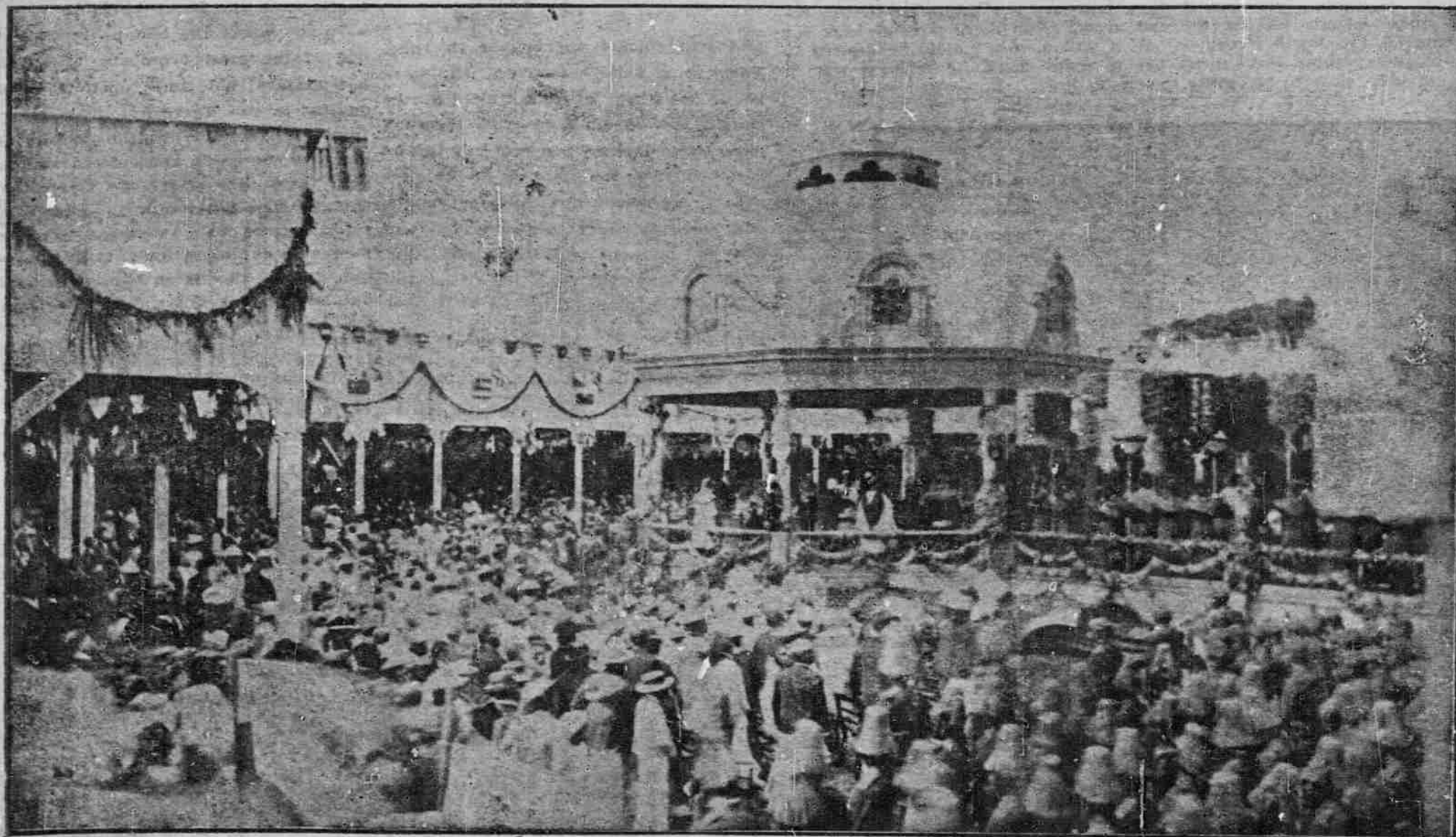
The last census, of 1900, gave Hawaii a population of 154,001, and it is estimated that those who have left the islands offset the arrivals. In 1902 there were 12,550 registered voters. The organic act allows practically universal suffrage, there being no restriction on even the wards of the Territory at the leper settlement, while the natives were not required to understand the English language in order to qualify as voters, although compulsory education has existed here since 1850, and English has been the only language taught in the public schools since 1887.



PROCLAIMING THE REPUBLIC OF HAWAII JULY 4TH, 1894.

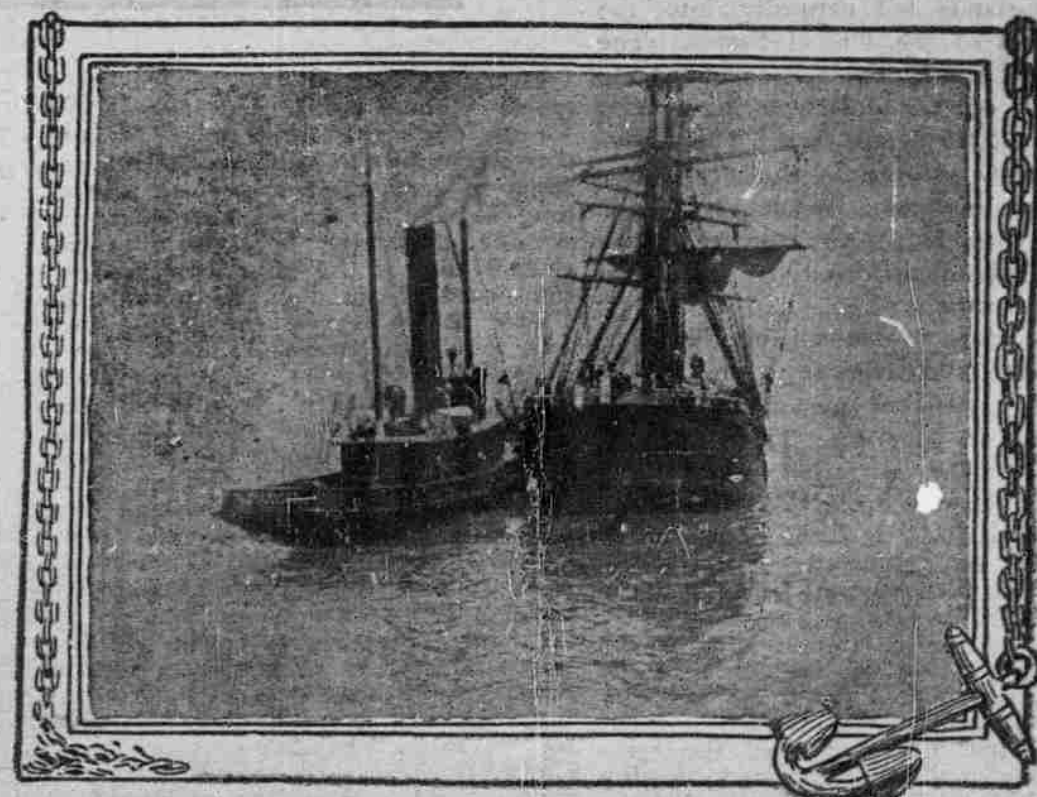


BARRICADE ON THE STEPS OF THE PALACE DURING THE RESTORATION CRISIS IN DECEMBER, 1893.



THE CORONATION OF KALAKAUA I.—SCENE IN THE AMPHITHEATER WHEN THE KING PLACED THE CROWN ON HIS HEAD, FEBRUARY 12, 1883.

Famous Clipper Race.



A most remarkable race of clipper ships from New York to San Francisco, over a course of 15,000 miles in length, took place in the long ago. The ship "Wild Pigeon," Capt. Putnam; the "John Gilpin," Capt. Doane; the "Flying Fish," Capt. Nickels, and the "Trade Wind," Capt. Webber, took part.

These are all clipper ships; they were ably commanded, and handled by their masters most beautifully. It was a sweepstakes, and to win both speed and wind were essential. All sailed from New York in the autumn of 1852, the "Wild Pigeon" October 12th, the "John Gilpin" October 29th, the "Flying Fish" November 1st, and the "Trade Wind" November 14th. It was the season for the best passages. Each one was provided with the wind and current charts, each one had evidently studied them attentively, and each one was resolved to make the most of them, and do his best. All ran against time, but the "John Gilpin" and the "Flying Fish" for the whole course, and the "Wild Pigeon" for part of it, ran neck and neck, the one against the other, and each against all.

It was a sweepstakes with these ships, around Cape Horn and through both hemispheres. The "Wild Pigeon" led the other two out of New York, the one by seventeen, the other by twenty days. But luck and changes of the winds seem to have been against her from the start. As soon as she had taken her departure she fell into a streak of baffling winds, and then into a gale which she fought against and contended with for a week, making but little progress the while; she then had a time of it in crossing the horse latitudes, after having been nineteen days out. She had logged no less than thirteen of them as days of calms and baffling winds; these had brought her no farther on her way than the parallel of 26 degrees north in the Atlantic. Thence she had a fine run to the line, crossing it between 33 and 34 degrees west the thirty-second day out. On the 30th of December the three ships crossed the parallel of 35 degrees south, the "Fish" recognizing the "Pigeon"; the "Pigeon" saw only a clipper ship, for she could not conceive how the ship in sight could possibly be the "Flying Fish," as that vessel was not to leave New York for some three weeks after she did. The "Gilpin" was only thirty or forty miles off at the same time. The race was now wing and wing, and had become exciting. With fair winds and an open sea the competitors had now a clear stretch to the equator of 2,500 miles before them. The "Flying Fish" led the way, the "Wild Pigeon" pressing her hard, and both dropping the "Gilpin" quite rapidly, which was edging to the westward. The two foremost reached the equator on the 13th of January, 1853, the "Fish" leading just 25 miles in latitude and crossing in 112 degrees 17 minutes, the "Pigeon" 40 miles farther to the east. At this time the

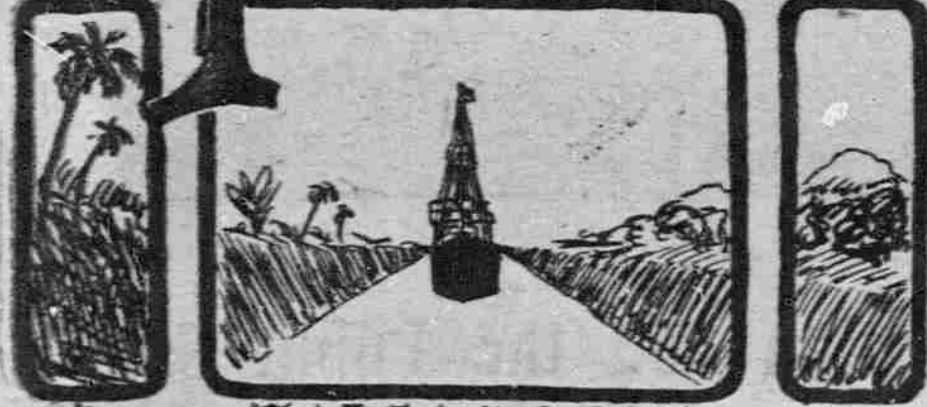
"John Gilpin" had dropped 26 degrees astern, and had sagged off several degrees to the westward. Here Putnam, of the "Pigeon," displayed his tact as a navigator, and again the fickle winds deceived him. The belt of northeast trades had yet to be passed; it was winter, and by crossing where she did she would have an opportunity of making a fair wind of them without being much to the west of her port when she should lose them. Moreover, it was exactly one year since she had passed this way before: she then crossed in 109 degrees and had a capital run thence of seventeen days to San Francisco. Why should she not cross here again? She saw that the fourth edition of Sailing Directions, which she had on board, did not discountenance it, and her own experience approved. Could she have imagined that, in consequence of this difference of 40 miles in the crossing of the equator, and of the two hours' time behind her competitor, she would fall into a streak of wind which would enable the "Fish" to lead her into port one whole week? Certainly it was nothing but what sailors call a streak of ill-luck that could have made such a difference. But by this time the "John Gilpin" had got its mettle up again. It crossed the line in 116 degrees exactly two days after the other two—and made a glorious run of 15 days, thence to the pilot grounds of San Francisco.

Thus end the abstract logs of this exciting race and these remarkable passages. The "Flying Fish" won the race, making the passage in 92 days, 4 hours from port to anchor; the "Gilpin" in 93 days and 20 hours from port to pilot, the ship "Wild Pigeon," passage 118 days, the ship "Trade Wind" followed, passage 102 days, having taken fire and burned for eight hours on the way. Thus ended a very interesting race for American clipper ships from New York to San Francisco. The "Flying Fish" won the race by 40 hours, 15,000 miles. "Flying Fish" from port to anchor, passage 92 days, 4 hours. "John Gilpin" from port to pilot, passage 93 days, 20 hours. "Wild Pigeon" from port to pilot, passage 118 days. "Trade Wind" from port to pilot, passage 102 days.

Great indignation has been caused in Germany in the latest case of lese-majeste. A 13-year-old schoolboy, named Adelbert Grauback, who was brought before the criminal court at Lissa, in Prussian Poland, and accused of insulting the emperor, was sentenced to three months' imprisonment. As a rule cases of this kind attract but little attention in Prussia, as they are fairly common, but the tender age of the accused in the present case has caused an exception to be made to the rule. The "Vossische-Zeitung" protests against the action of the authorities in sending a schoolboy to prison for such an offence as lese-majeste, and points out that the sentence will be inscribed on the official passport which every German is bound to carry. He will probably be ruined for life.



THE PANAMA CANAL



HAWAII AND THE PANAMA CANAL

By Lorin A. Thurston

It is a moral certainty that within the next 5 or 7 years the Panama Canal will be open for business and that a great shipping business which now goes around south of the American and Asiatic Continent, will use the canal and cross the Pacific to Asia and Japan.

There are those who point to the fact that the line from Panama to the Orient via San Francisco is shorter than via Honolulu, and claim that by reason thereof the great trade which will flow through the canal across the Pacific will make San Francisco the port of call instead of Honolulu.

This argument ignores the fact that many things affect and decide routes of travel besides distance.

The shortest distance to the top of a bluff is straight up the face of it, but the road to the top never goes straight up. It winds and circulates about, covering two or three times the direct distance from top to bottom.

The shortest distance from San Francisco to St. Petersburg, is via the North Pole; but no one ever takes that route.

There are good reasons for this, and there are good reasons why the bulk of trans-Pacific commerce will go via Honolulu instead of via San Francisco.

Some of these reasons are as follows:

SEA SMOOTH—WIND GENTLE.

1. The sea is normally smooth and the winds gentle, on that portion of the Pacific extending from Panama to Hawaii, and from Hawaii to the Asiatic coast.

On the other hand, the normal weather conditions across the north Pacific, on the great circle line, are a tempestuous sea and stormy winds.

The bulk of the trans-Pacific traffic will be carried on in comparatively low powered steamers, to whom such weather conditions are a serious hindrance.

A few days' heavy weather will use up far more fuel on the shorter route than would be expended on the greater distance of the longer but smoother route.

This very fact has been several times illustrated by Government transports sailing from Seattle and vicinity for the Philippines via the northern route, which, after bucking the giant seas of the stormy north, have given up the struggle and come south to the balmy airs and placid waters of Hawaii; and, after recouling, departed in peace, "floating through Paradise on an even keel," as the poet phrases it.

WIND AND CURRENT FAVORABLE.

2. Stormy, rough weather is disadvantageous to economy of steamer operation, no matter what direction the wind is from; consequently, other things being equal, smooth water will always be chosen. But if in addition to smooth water a fair wind and favoring current is to be had, a strong additional argument in favor of the smooth route is presented.

It is an established geographical fact that in the North Pacific, in the latitude of San Francisco, the prevailing wind blows strongly from the west sweeping well down toward the coast of Mexico. The ocean current also sets in the same direction, frequently running from one to two knots an hour.

A vessel bound from Panama to China, via San Francisco would therefore be steaming against wind and current, for the entire distance of approximately 10,000 miles.

On the other hand, in the latitude of Hawaii, the prevailing wind, blowing nine months in the year, is a moderate North East trade wind, while the current flows steadily from east to west.

West bound steamers are therefore reasonably certain of not only smooth water, but of friendly winds and favoring currents.

These two favoring conditions do not of course exist with relation to east bound ships, although the wind being northeast and the course south easter-

ly the wind is not entirely a head wind.

3. The harbor of San Francisco, and in fact the entire North Pacific, is beset with fogs during the greater part of the year.

One of the favorite arguments of the San Francisco route theorists, is that Unalaska or Dutch Harbor in the Aleutian Islands, which lie the same distance from San Francisco that Honolulu does, will make an ideal midway coaling station for the Panama-Hongkong route.

The ports named are not only the storm center of the North Pacific, but are among the foggiest ports in the world. They are not infrequently so beset with fog that for a week, and even for weeks, at a time, navigation is practically suspended in their vicinity.

These fog conditions are responsible for a never ending series of wrecks and disasters. The Rio Janeiro is only the last of a long series of victims to the fog terror of the Northern Pacific.

As against this deterrent to safe and economical commerce, fog is unknown in the latitude of Honolulu, from Panama to Hongkong. The mariner upon the Honolulu route is certain that, day or night, whatever obstacles there may be to navigation, they will be visible; and seeing an enemy is half the task of conquering him.

FAVORING TIDES.

The variation of the tides at Honolulu is only about fifteen inches. It is only two feet in extreme spring tides. As a result there are no violent currents to be reckoned with, there is no waiting for high tide on the bar, there are no delays night or day.

With clear, mild weather; 34 feet of water on the bar at low water; no endangering currents, and with deep water wharves in an absolutely land locked and safe harbor within half a mile of the high sea, a through steamer can arrive, enter the harbor, dock, coal, water and depart in less time than it frequently takes a vessel to get inside the Golden Gate at San Francisco.

It is only upon the rarest of occasions that an ocean steamer attempts to enter San Francisco if it arrives after dark. It was during an attempt to enter just at daybreak that the Rio Janeiro tragedy took place.

The largest steamers also have to wait for high tide, in order to cross the bar safely.

At Honolulu, Ocean steamers arrive and depart as freely at low as at high tide; and 12 o'clock midnight is as one with 12 o'clock noon, so far as safety of the ship is concerned.

This ability to proceed promptly is good on the average for a day or more in favor of the Honolulu route over that by way of San Francisco.

DESERTION OF SEAMEN.

5. The sailor man's love for a sea life is proverbial; but no less well known, especially to the distracted captain who wants to pursue his voyage, is the fact that after a long ocean voyage Jack's consuming desire is to get ashore, and away from his ship. He frequently abandons his clothes and the wages due him, in his haste and anxiety to accomplish this object.

Ships are delayed for days, and even weeks, through desertion of crews, and laws authorizing their arrest and return to the ship are dead letters in such great cities as New York and San

Francisco, where a man can be more easily and completely lost in fifteen minutes, than in a year's exploration in the heart of Africa.

On the other hand, in a city of the size of Honolulu, every stranger is immediately recognized as such, and a runaway sailor is located and returned to the ship in a few hours.

This reason for preferring the Honolulu over the San Francisco route may appear frivolous to the uninitiated; but to those who know the trials and tribulations of masters and owners of deep sea ships, it will appeal as a strong factor in considering the relative merits of the San Francisco and Honolulu routes.

QUICK DESPATCH.

San Francisco is a great city, and is rapidly growing greater. The great field of its activities lies inland. The arrivals by sea and its over sea commerce are but incidents, items in a great whole.

To Honolulu the over sea commerce, the arrival and departure of deep sea ships, is the alpha and omega of its existence. Everything that it imports and everything that it exports passes by sea. Everyone who goes anywhere and every one who comes from anywhere travels by sea.

These two diametrically opposite conditions have created a habit of mind, a spirit and method of treatment of shipping that markedly characterizes the two ports.

At San Francisco the customs, quarantine and other officials, everyone who

has to do with ships, take their leisurely time to board and pass arriving vessels. No arrival after office hours is allowed to interfere with official dignity and repose. The ship and her officers, passengers and crew wait until the next morning before they so much as see an officer, and when, at their convenience, the officers do appear, they take their time to the matter.

At Honolulu, on the other hand, where all commercial as well as social life hinges upon and circulates around, and is vitally affected by over sea connections, arrivals and departures, promptness of inspection and despatch, night as well as day, are the rule and take place as a matter of course.

It is not the difference in the officials at the two ports. It is the difference in the environment and in the conditions that will ever continue, that give, and will continue to give to over sea ships a higher position and secure to them better and prompter attention and speedier despatch in Honolulu than in San Francisco.

It is submitted that, whether Hawaii is the half-way house for all of the trans-Pacific business or not, enough has been shown above to give good reason to believe that it will not, upon the opening of the Panama canal, become the sequestered sleepy hollow of the world, as has been predicted by would-be prophets, but that it will get a fair share of the benefits to be derived from the tide of commerce which will within the next few years sweep past our shores.

Building the Canal

A sea level canal would be less expensive to maintain and less expensive to operate, would save time in passage through it, and could be widened and deepened when required, without interfering with traffic. John F. Wallace, Chief Engineer of the Isthmian Canal.

At a meeting of the House Committee Interstate and Foreign Congress, held at Washington on December 18, John F. Wallace, Chief Engineer of the Isthmian Canal, gave the committee the benefit of his investigations so far made regarding the engineering tasks to be performed in the construction of the big ditch. Wallace made this explanation of the general problem:

"To determine the most feasible plan for the construction of the canal will require a most careful and comprehensive examination, not only of surface conditions, but the sub-surface must be explored."

"After following the valley of the Chagres to Gamboa, the line of the canal follows a tributary called the Obispo up the summit of Culebra, and thence follows the valley of the Rio Grande into the Bay of Panama. The summit at Culebra was originally about three hundred feet above the sea level, and is the lowest point in the divide along the entire length of the Isth-

mus of Panama. The plan of the former commission provided for a dam of practically 100 feet in height above sea level, at Bahia, with a water level of ninety feet above sea level. This place was selected on account of the fact that at that point the hills on either side of the Chagres come comparatively close together, being about fifteen hundred feet apart, and from the surface indications it seemed a favorable place for the construction of a dam. But the indications are that this locality would be an unfavorable and expensive one for the construction of a high dam.

"The first plan to be considered, the one estimated upon by the former commission, is the possibility and probability of a high dam or proper foundation for a high dam at Bahia, upon which depends the advisability of constructing a high level canal, with the surface of the water ninety feet above sea level."

"The second plan under consideration is a summit level of sixty feet above sea level. Constructing a canal on this plan admits of two different methods of treatment: First, The construction of a dam 60 feet above sea level at Bahia, with two locks of thirty feet, there being two locks on the western slope; second, the construction of a dam sixty feet above sea level at Gatun, eight miles from Colon, with two thirty-foot locks in the same vicinity. The adoption of a sixty-foot level also will render it necessary to construct a dam at Gamboa, in order to provide a reservoir to accumulate water enough during the wet season to furnish water for the summit level of the canal."

OTHER LEVELS POSSIBLE.

"The construction of a dam at Gamboa in this connection would also control the Chagres River, except that it would be necessary to provide a safety spillway by the construction of a tunnel some eight miles in length through the divide, discharging the surplus waters of the Chagres into the headwaters of the Juan Diaz, or the alternative plan of constructing a tunnel four miles long through the divide, separating the Chagres basin from the headwaters of the Gatunillo, a stream that enters into the Chagres Valley at Gatun. Should this latter course be adopted it would be necessary to construct an auxiliary channel for the Chagres from Gatun to the sea in order to divert its floodwaters into the bay westward of Colon."

"The third general plan under consideration would be the construction of a canal with a 20-foot level above sea with a single lock at Miraflores, and a single lock at Bahia, or in the immediate vicinity; the construction of the Gamboa dam to be required in this instance the same as in the 60-foot level plan."

"The fourth plan would be the construction of a sea level canal with a tidal lock at Miraflores. In this connection it is necessary to explain that while the mean sea level of the Pacific and the Caribbean are the same, high tide in the Bay of Panama rises ten feet above mean sea level and falls ten feet below whereas, the fluctuation of the tide of the Caribbean at Colon is less than two feet. The construction of a dam at Gamboa with the necessary spillways as noted in the previous plan would be the same under the sea level plan as under the 30 or 60 foot level."

"The construction of the Gamboa dam would provide the water supply for the entire line of the canal, including the cities of Panama and Colon. It also would provide a power plant for the generation of electric power sufficient to furnish ample power for the operation of the Panama Railroad and for the operation of any machinery that might be used in the construction of the canal. It would require two years to construct this dam and, roughly estimated, its cost, including spillways, would be between \$15,000,000 and \$16,000,000, not including the power plant."

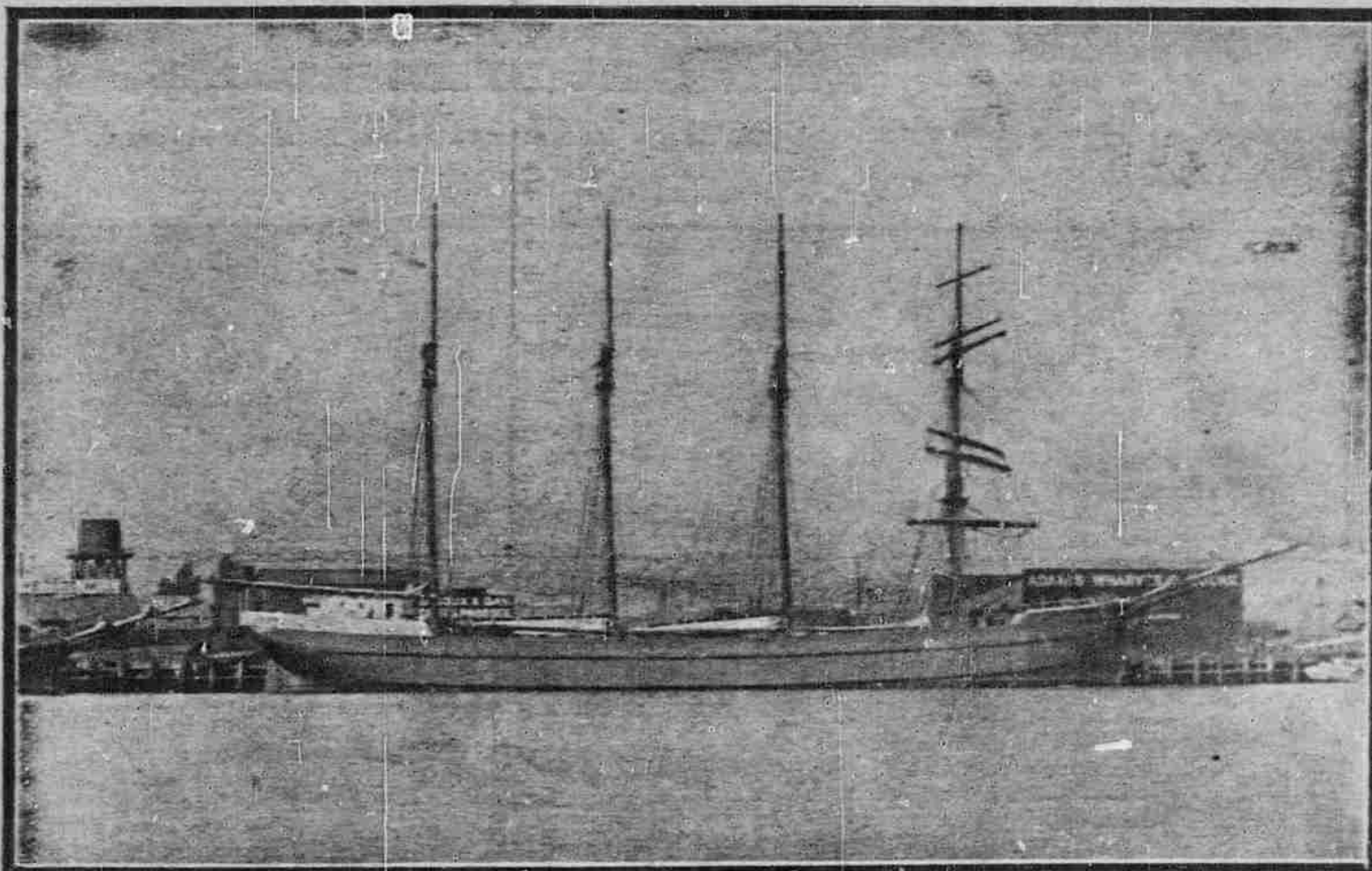
GREAT SUMS INVOLVED.

Asked by members of the commission for an estimate of the cost of the various plans, Wallace said the best estimate that could be made at present would be based on the estimate of the former commission of \$200,000,000 for a ninety-foot level. Figuring with this as a basis, the sixty-foot level canal would cost \$25,000,000, could be open for traffic in ten years, and fully completed in twelve years; the thirty-foot level would cost \$250,000,000, open for traffic in twelve years and completed in fifteen years; the sea level canal would cost \$300,000,000, could be open for traffic in fifteen years and completed in twenty years.

Wallace stated that the excavation for the Culebra cut was the feature of the construction of the canal that took the time. He said:

"Upon the economical and efficient handling of material from Culebra depends the cost and time it would take to complete the canal. Every other question and every other problem connected with the entire work is subordinate and inferior to the problem of the Culebra cut; that is the principal problem of this work."

"Work is now going on in the cut, one American steam shovel and some of the French machinery being in operation. Fourteen American steam shovels have been purchased, one of which is being set up. The others are to be delivered at the rate of one a month. During October 3185 men were on the payrolls of the commission. Of these 2166 were laborers. More laborers are to be employed in the immediate future."



Barkentine Fullerton, First Vessel in the Hawaiian Oil Trade.

...Gas System for Honolulu...

The Honolulu Gas Company has closed all contracts for its works, and expects to have its pipes laid and to be ready to supply gas for fuel and for illuminating purposes not later than the first of July.

As a matter of fact, it is anticipated by the gentlemen at the head of the concern that it may be ready for work even earlier than that, but it is certain that the date in question will see the works started.

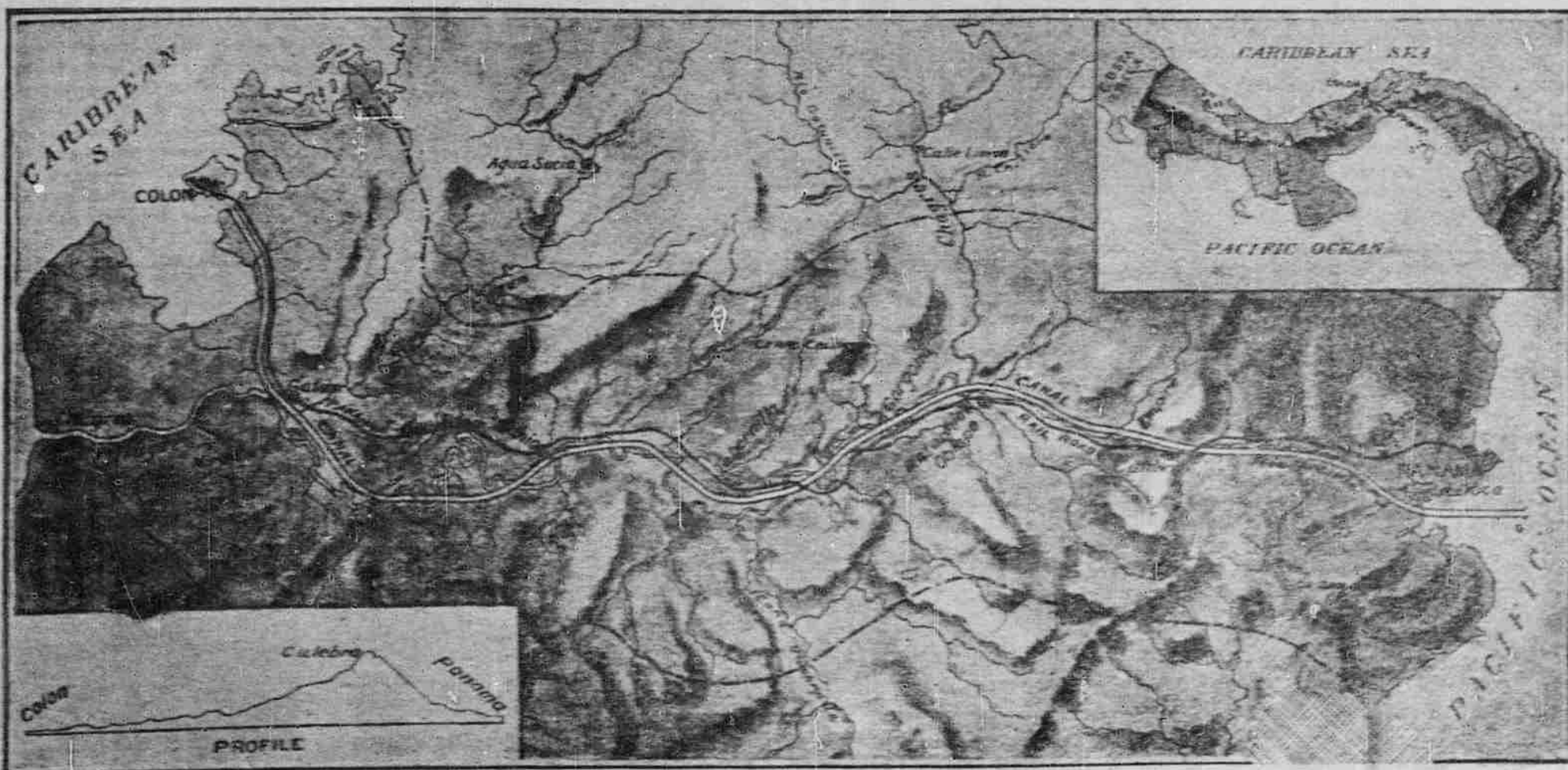
The struggle of the gas company to get legal permission to get upon its feet has been going on for a number of years past. It has always had the financial ability to stand alone, being backed by some of the strongest men in Honolulu, but mere money can do little in the promotion of an enterprise

of this kind without a charter from the legislature that is a condition precedent to the business of supplying the public with light and fuel by means of conduits in the public streets.

At three sessions of the legislature, one of them the legislature of the Republic of Hawaii, Mr. W. R. Castle sought to obtain a charter for a company to supply gas for fuel and illuminating purposes, to the city of Honolulu. At the first session of the Territorial legislature, in 1901, the franchise bill asked for was passed, but it was vetoed by Governor Dole because of a defect in the provisions of the bill asking for the necessary authorization from the Congress of the United States to grant the charter.

The matter went over then until the session of 1903, when the charter bill was finally passed and signed, and the necessary authorization obtained in due form from Congress. That body, however, cut down the rate that it was proposed to charge for gas from \$2.50 to \$2.25 a thousand feet.

Being thus set upon its feet in a legal way, the Honolulu Gas Company proceeded to enter into arrangements to put down pipes and construct its plant. First, it was necessary to decide upon the kind of gas that could be manufactured most conveniently, and correspondence was opened with various experts in the business of making gas. The decision was in favor of (Continued on page 15.)



MAP OF THE PANAMA CANAL ROUTE.

Steady Growth is Shown by Year's Building



Fine Residence Recently Built at Beretania Avenue and Punahou Street.

Honolulu has always been a city of beautiful homes, and the past year has seen many added to the wealth of the town in this respect. Embowered in trees as the residence portion of the city is, the new houses do not make themselves so apparent as in the cities of the mainland, where trees are things of slower growth, but the new houses are here, nevertheless. The reports of the local architects, which furnish the best data for an article on building, show not alone that Honolulu has been improved during the year by the addition of many buildings and residences designed by local architects, but that much work has also been done in the way of buildings in the other islands of the group outside of Oahu. The reports of the leading local architects, compiled from information furnished by the several firms, follows:

W. M. Campbell reports that since his return from the Coast he has built twenty-three houses in different parts of Honolulu, which is an average of about two per month for the time that Mr. Campbell has been here. The aggregate value of these twenty-three houses is \$85,000, and the estimated value of the land before the buildings were placed on it is \$30,000. This land value has been so increased by building operations, that it may be fairly stated, that Mr. Campbell has added \$100,000 to the amount of taxable property in the city of Honolulu. In addition to this, the government draws about \$200 more in water rates from the new householders.

With one exception, namely the building for the geodetic station, it may be said truthfully that none of these buildings would have been put up had it not been for the efforts of Mr. Campbell himself. Mr. Campbell now has six new buildings under way, of which the probable aggregate cost will be about \$25,000. The architect, asked as to the present situation, said that in his opinion there was a general restoration of confidence in the future in the community, and that he had especially noted a marked improvement in this regard within the past four months. Many residents of the city were making improvements to their dwellings, and more were in contemplation.

The finest house built by Mr. Campbell during the year past was the residence of L. Abrams, on Beretania street, near Punahou. It is a handsome two-story building, with six large rooms on the first floor and four on the second, and with the attic finished for a billiard room. It has a stone foundation, and a roomy basement. There is also a large veranda, almost a necessary part of every comfortable Honolulu house. The residence cost \$6,000.

Architect Traphegan reports that in his opinion the town has been somewhat overbuilt. He has finished the handsome Odd Fellows' building, which was written up last year, and has designed and built a new wing to the Queen's Hospital, of which improvement he does not choose to state the cost. The new building at Oahu Prison, written up at length in the Advertiser two weeks ago, was also built from a design by Traphegan. He is just beginning work on a new building for the United States Immigrant station.

The firm of Beardslee & Gill have designed during the year a new building for Prof. Woods to be used as a Hamman baths, to be erected on the lot between the Alexander Young Hotel and the Y. M. C. A. building. It will be a structure of two stories the second floor being designed to serve as a lodge and club room for the Elks. This firm likewise designed the main building for the insane asylum, the contract for the building of which has been held up by various complications.

Architect A. L. Kerr has built during the year a cottage at Waikiki for J. P. McInerney, the cost being \$4,500. He has likewise put up the new Fish-

Matlock Campbell, Home Builder

In an article contributed by Mr. Matlock Campbell, a well known architect and builder of Honolulu, entitled "Five Years of American Rule in Hawaii," he has modestly refrained from speaking of his own enterprising hand in the great development that has taken place in Honolulu since annexation, and it is but just that he should have special mention in these columns. Through his courtesy we have been handed views of a few of the many artistic residences he has erected here during the past few years.

The following facts are as given by him: "Since one year ago the first of this month," said he, "I have built in Honolulu proper twenty-three residences and one near Pearl City on this Island, making an average of one house every two weeks, besides this I have moved my mill, rebuilding same and giving twice the capacity which it formerly had. In addition I have done \$3,000 or \$4,000 worth of general repair work in the alterations of old buildings, etc. The twenty-four residences which I have built range in value from \$1,000 to \$9,000 each, besides a considerable amount invested in concrete sidewalks, fences, barns, servants' quarters, etc., approximating a total outlay of nearly \$100,000. About 75 per cent of these houses I have built on property (in my Pawaia tract) sold to patrons who had called upon me inquiring about houses to rent, the other 25 per cent have been dealt worked up on the outside."

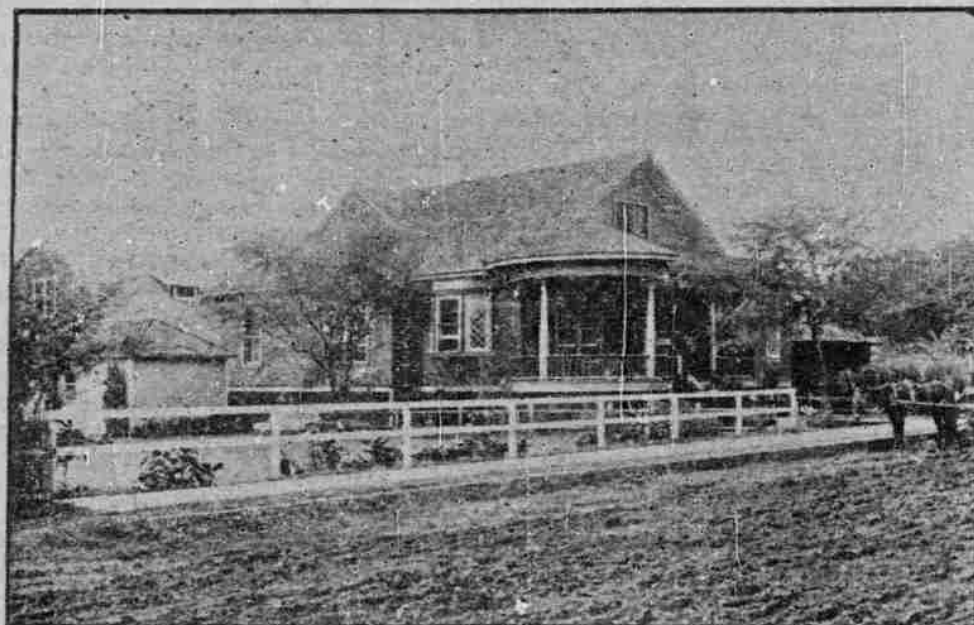
"How do you manage, Mr. Campbell," he was asked, "to work up such a business when most of us have found it such dull times during the last two years?" He smilingly replied, "I suppose it is all in knowing how."

In our New Year's edition two years ago, Mr. Campbell was referred to as doing more than any other one man in Honolulu toward developing and beautifying the city, and his last year's work has been double that of any previous year.

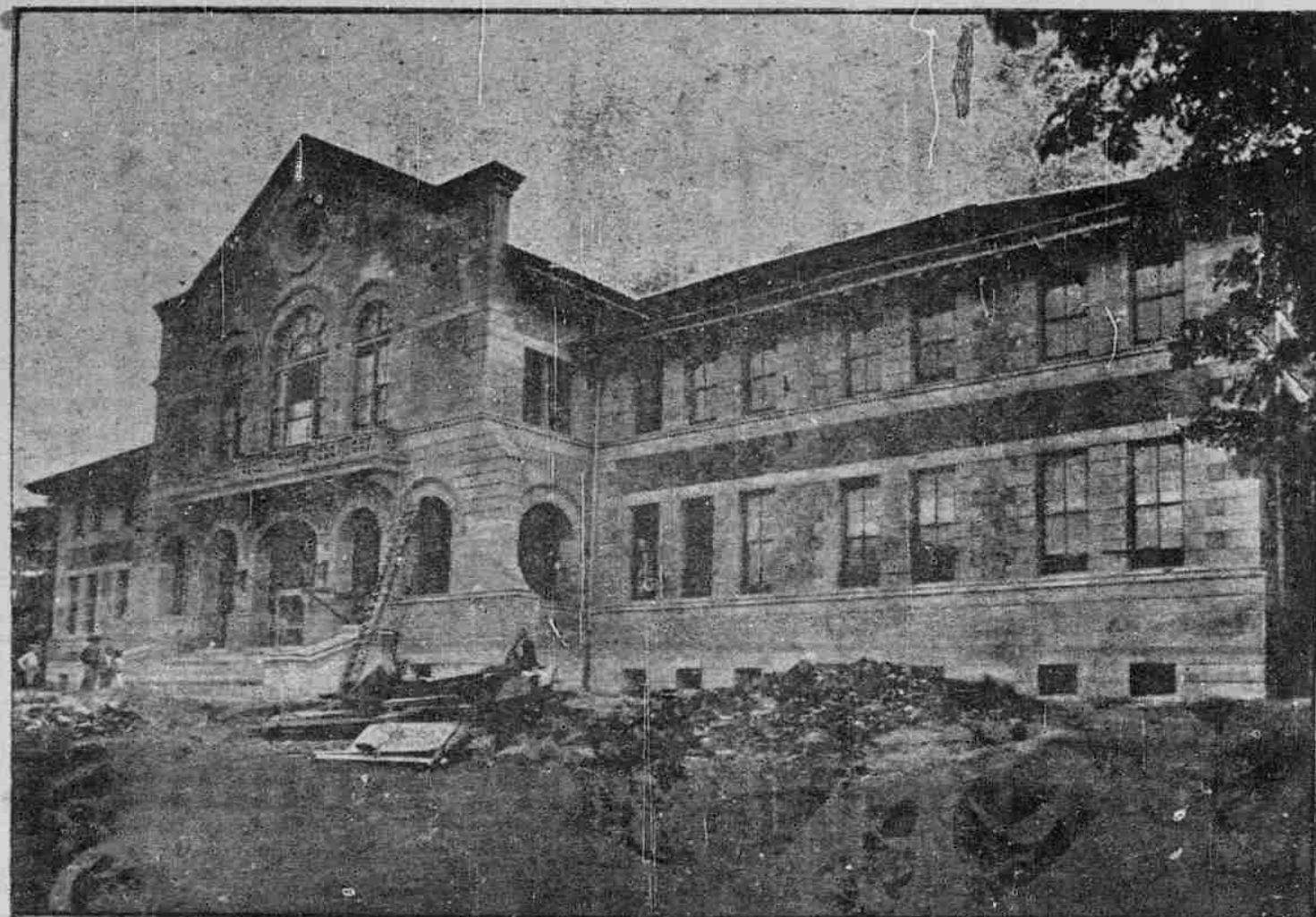
As one goes along the streets the graceful lines, oriel windows and quaint diamond-shaped panes, wide, overhanging eaves and large verandas of Campbell's houses, all present together with a general harmony of color and symmetry, a beautiful picture, as seen through the trees.

Mr. Campbell has, since coming to Honolulu, laid out two prominent streets, Matlock avenue and the extension of Young street, which he has connected with King street through Elsie avenue, all of which he has lined with ideal homes on both sides, which with their concrete sidewalks and pretty lawns form an ideal community.

He has at the present time in course of construction four houses, and as many more to start within sixty days.



A Seven Room Cottage on Matlock Avenue.



THE ROYAL SCHOOL, BUILT DURING 1904.



Row of New Dwellings in Beretania Avenue.

for two residences, one of which will be erected in Honolulu this year for his cousin, Mr. Baldwin.

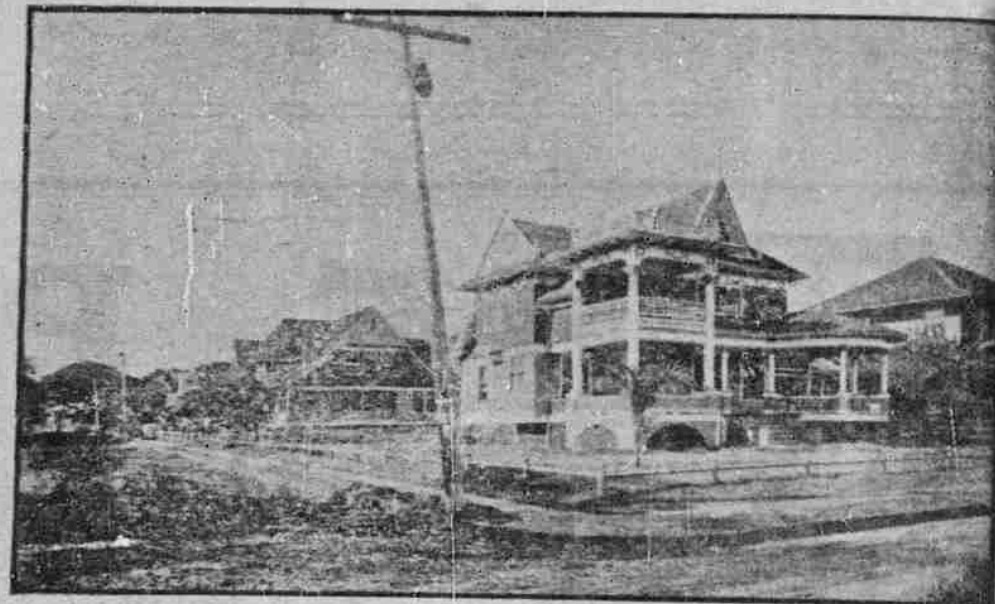
Altogether, while there was not so much building in Honolulu in 1904 as in the previous year, the outlook may be said to be very hopeful.

CLIMATE OF THE ISLANDS.

The temperature varies from an annual average of 74 deg. on the seashore and 64 deg. on the high land to 32 deg. on the summits of the highest mountains, which are often snowclad.

The range of rainfall is from a few inches per annum on the dry and deserted lava-covered areas on the lee side to some 400 inches or more in special localities on the well watered and wooded slopes to the windward cation.

A dog recently appeared in a court at Prague on the charge of being very vicious, and was acquitted. Maurice Weinert, a machinist said that the dog bit him, and demanded damages from the owner for not keeping him tied up. The dog was brought into court and, though he was a formidable mastiff, he showed that he had the temper of a lamb. He sat on his hind legs in the presence of the court, gave his paw to the witnesses and even to his accuser, who was compelled to admit that the dog was not such a vicious animal as he pretended. The owner and the dog were acquitted, the court considering that if the dog bit the plaintiff it was special localities on the well watered due, probably, to unnecessary provocation.



Seven New Dwellings on Kinau Street, Dr. Herbert's in Foreground.

Education and the Public Schools

By A. T. Atkinson in Governor's annual report to the Secretary of the Interior.

Education at the Hawaiian Islands began with adults rather than with the children. Between the years of 1823 and 1827 a peculiar system of schools sprang up, which spread rapidly over the islands to the remotest villages and flourished for about ten years. The high chiefs, with their immediate attendants, were the first pupils. Each chief sent the most proficient scholars in his retinue to his different lands as teachers, with a notice to his tenants to attend school. The eagerness of the people to acquire the novel and wonderful arts of reading and writing was intense, and almost the whole population of both sexes and all ages went to school. These primitive schools at the time of their highest prosperity reached the number of 900, attended by 52,000 pupils, mostly adults.

The first school laws were enacted in 1841 by the King and chiefs in council. School agents for each island, with a general superintendent over the whole, were to be appointed by the King in council. The parents in each village were to elect a school committee, who were to act in conjunction with the school agent in regard to the appointment and support of teachers and the erection of schoolhouses. Teachers were required to have certificates from the school agent. No person born since 1820, who could not read and write, could hold any office or even get married. Attendance at school was made compulsory on all children between the ages of 4 and 14. This has since been amended by substituting 6 for 4 and 15 for 14 years.

With regard to the average knowledge among Hawaiian pupils as compared to elsewhere, it can be stated without contradiction that practically all Hawaiians under 50 years of age can read and write their own language and that nearly all Hawaiians under 20 years of age can read and write English, and the same may be stated of the Portuguese population.

It may be interesting to note that the number of children within school age attending school in 1880 was 70 per cent, in 1890 was 81 per cent, and in 1900 was 96 per cent. Of Hawaiians, 98 per cent attended school within school age; part Hawaiians, 99; Hawaiian born foreigners, 94; Portuguese, 85; Japanese, 94; Chinese, 92; and of course all those who are American, British, French, and German extraction attended school. There are few places upon the face of the civilized globe where so many children of school age attended school for the full session of the year. Our year begins on September 1, and closes on June 30, and up to the present time, for a period of sixty-four years, there has never been a break in the constant continuation of the schools of the Hawaiian Islands, whether under the Monarchy, under the Independent Republic, or, at the present time, as a Territory of the United States. This is a record which is phenomenal, and greatly to the credit of the various administrations which have had charge of the board and later of the department.

On June 30, 1903, the total enrollment of all classes of schools in the Territory was 18,415. The close of the present period, June 30, 1904, shows an enrollment of 19,290. This is a gain of 874 pupils for the year. Of these, 10,457 were males and 8,832 were females. The enrollment of the public schools has advanced from 13,793 to 14,467, an increase of 674; that of the private schools from 4,622 to 4,832, an increase of 210. Last year there was an increase of 604 in the enrollment of the public schools and of 293 in the private schools. Thus the private schools have fallen off in comparison with the public schools.

There are all 204 schools in the Territory, of which 147 are public schools supported by public money, and 57 are private schools supported by trust funds, rents, private contributions, and fees. At last report there were 144

public schools, which shows an increase of 3, while the private schools were listed at 59 and are now listed at 57. All the public schools of the Territory from the high school and normal down to the smallest country school are free and are open to all population, regardless of color or race. Every upli who enters the Territorial public schools stands upon exactly the same plane. No race and no color is considered. The American, the European sits with the Malay, the Chinese, and the Japanese, and their amusements on the playgrounds are conducted upon the same level plane. The schools of the Territory are making the population come to a level. It is an amalgamation of races which probably is not seen in any place outside of Hawaii.

Of the teachers of the Territory in active employment during the last year, there were 648 as against 633 the previous year. Of these 389 were males and 457 were females. The public schools employ 339 teachers and the private schools 247 teachers. This gives an increase of 13 teachers in the public schools and no increase whatever in the private schools. This gives an average of 36 pupils to each public school teacher, and 19 pupils to every teacher in the private schools.

There is a department of public works, which has charge of roads, bridges, wharves, public buildings, waterworks, sewer systems, public lighting plants, etc., throughout the whole group, and under which practically all internal improvements are conducted.

There is a board of health, in charge of the leper settlement and the inspection of fish, meat, and other foods for sale. It supervises the collection of vital statistics for the whole Territory and is given ample authority in case of epidemic. The board has constantly to supervise the sanitary condition of every locality, and is doing much to inculcate a high public standard of cleanliness.

There is a police department, under a high sheriff, with deputy sheriffs on each island.

A judiciary system exists, with a supreme court of three judges, whose decisions are final. There are six circuit courts, practically one on each island; and district or police courts for each of the sub-divisions of the main six circuits.

A board of education, which carries on the work of the graded public schools, was established under the Monarchy, and its records have always been a source of great pride.

A treasury department, in charge of the collection of the entire funds of the Territory, either from taxes or any other revenue, has charge of our financial affairs. In this department there is a tax bureau, with an assessor and collector for each of the islands or main subdivisions. Under this department also falls the recorder's duties, with a single office located in Honolulu. The treasurer supervises all corporations, banks, and insurance companies.

An auditing department does all the bookkeeping and checks all vouchers and accounts.

Last year, there were 488 vessels of 933,847 tons that entered Hawaiian ports, and 497 vessels of 936,827 tons that cleared for mainland and foreign ports. Of these there were 377 American vessels of 667,350 tons entered and 357 American vessels of 672,539 tons that cleared. This indicates that more than 70 per cent of the total commerce of Hawaii with the mainland and all foreign ports is conducted under the American flag.



A Six Room Cottage in Oahu College Grounds built for Prof. Anderson.



Residence of H. E. Cooper, Corner Beretania and Punahou Streets.

FIVE YEARS OF AMERICAN RULE IN HAWAII

BY MATLOCK CAMPBELL



Harold Hayselden's Residence, Matlock Avenue, 6 Rooms.

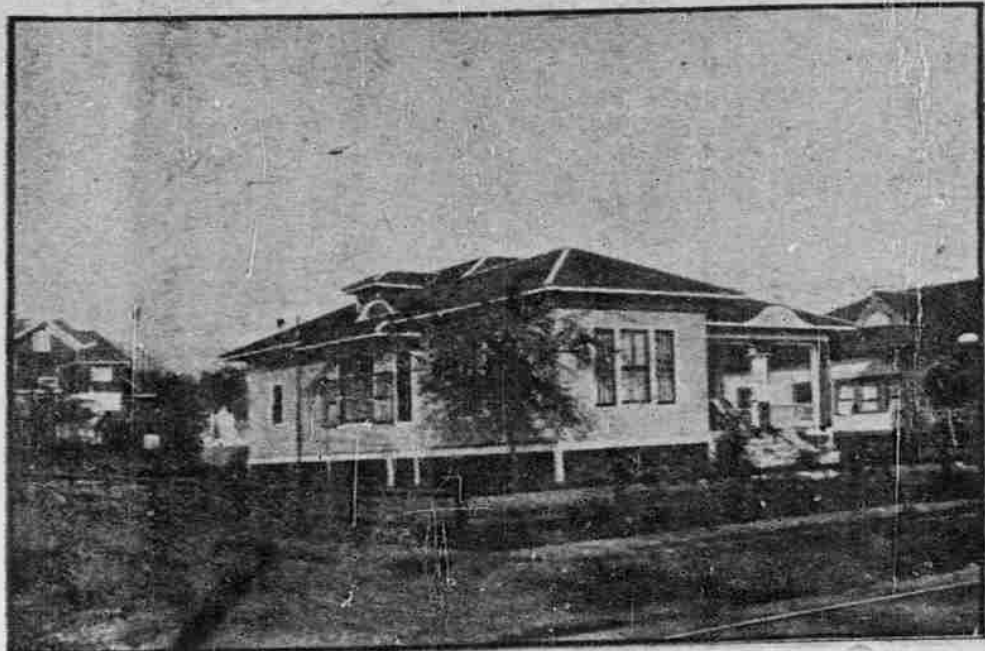
To observers visiting Honolulu in the early part of 1899, and not again until the close of 1904, it would be difficult to realize that the Honolulu of today was the same city which they had formerly visited, so great have been the changes wrought by the hustling American under five years of Uncle Sam's rule.

Yet to its residents who have remained here during that period, so methodically have these improvements developed that few stop to appreciate their true significance. In fact, there are those who hesitate to acknowledge that any change has been made for the better, sorrowfully refer to the "good days." But in order to adequately compare former Honolulu in its quaint, picturesque and languid condition, with the modern, up-to-date, progressive city of today, I must beg the readers' indulgence while I recall the impressions and incidental experiences attending my first visit to Honolulu and my later sojourn made just prior to annexation.

For nearly a year I had been filing a business engagement on the island of Hawaii, having gone there direct from San Francisco. Wishing to visit this city on my return, I took the local steamer "Kinau" at Mahukona and arrived here on Sunday at 4 a. m., August 10, 1897. I had planned to take one of the Oriental steamers which was scheduled to arrive at Honolulu on the following Tuesday morning, thus giving me two days to explore the city. On going ashore I found the air heavily charged with ozone which in a tropical climate is always evidence that there has been a recent shower; and as I strolled up the dark streets in the early dawn, I was conscious of some unknown fragrance abroad in the air which filled me with feelings of happy expectancy. I seemed to be in a land of enchantment even before the buildings and trees took definite shape. But as the sun arose with the approach of day a most charming transformation developed on every hand. The raindrops hung on the trees, making the leaves look as though they were studded with golden diamonds; and these trees seemed to be growing indiscriminately on a great many of the streets and in the sidewalks. As I passed along one of the thoroughfares in the heart of the city I found myself under a canopy of broad-leaved trees that grew on each side of the street, 50 feet high, and whose limbs interlaced overhead; and that I was literally walking on a carpet of brilliant fallen flowers. Looking upward, I saw that this variety of tree, which resembled the California cypress, was so heavily laden with flowers that the green leaves were almost wholly obscured; and as the bright sun's rays struck the rich red and yellow colored petals the tree looked as though it were on fire.

I was so enraptured with the picturesque-ness of every thing that morning that it never occurred to me to seek accommodations at a hotel. I strolled on and on until I came to a park which was enclosed with a high iron fence, the gates being guarded by Hawaiian soldiers. On inquiry, I was informed that it was the "Palace grounds," and, indeed, I could easily distinguish a massive building standing back among the trees. The grounds themselves, with their great variety of beautiful palms, Norway firs, banyan trees, and stately royal palms, dozens of varieties of the croton and other bushes, with their variegated, brilliant-hued leaves, also the bougainvillea vine, climbing 40 feet high over large trees with purple tipped leaves—all seemed to cast a glow, presenting a most magnificent flower garden on a grand scale.

Going out King street, I found myself entering a residential section of the city, revealing well-kept private grounds enclosed with magnificent hibiscus hedges and forests of every known variety of tropical trees and great climbing ferns, with leaves three feet long, growing to the very tops of trees 50 feet high. The great, noble "monkey pod," with its broad branches covering half acres, a hundred figs, mangoes, bananas, vams, guavas, oranges, bread fruit, papaya and dozens of other varieties of unknown fruits.



Residence of Edward Madden, Corner King Street and Elsie Avenue, 6 Rooms.

At this point I came in sight of the tall graceful coconut, with its crooked, sky-rocket shaped stem growing 60 and 80 feet high, holding its head far aloft from everything else. This graceful tree lent more to the picturesque features of the city than any other form of tree or shrub. Here my wanderings were cut short for I learned that the steamer I was to take for San Francisco was off port, two days ahead of time, and reluctantly I soon found myself aboard the S. S. China.

This beautiful Paradise which I had discovered soon disappeared below the horizon, but not the vision which had made such a lasting impression upon me. It was a strange fate that again found me steaming into the harbor of Honolulu less than two years later. A second time I had visited Hawaii and again returned by way of Honolulu; but this time I was determined to stay long enough to thoroughly explore the place. I arrived on Easter Sunday at 4 p. m. early in April, 1899, experiencing a very rough trip on board the famous steamer "Kinau" and found that the boat's reputation for acrobatic performances in a choppy sea was well earned for she indulged in such disgraceful gymnastics that she shocked the feelings of all the passengers, and never condescended to stop, even in the harbor of Kihel, where, according to the sworn statement of an old seaman—a fellow passenger—she turned a complete somersault during the night while at anchor in the harbor.

As a round bottom stomach pump, she was a huge success. So much so, that when I arrived in Honolulu I was not physically in condition to indulge in sight seeing, and so endeavored to find lodgings in the hotels, but to my chagrin found that all accommodations were engaged. This was occasioned in part by would-be speculators from the other islands and from the coast, who had been attracted here by the sugar boom in anticipation of annexation. So I started out in quest of private lodgings, and although it was Sunday morning, could not but help noticing that there was an air of business about the place that was not evident on my former visit.

But what struck me as particularly unusual was that not one person in twenty whom I met was wholly of my own race. There were the Chinese, Japanese, Hawaiians, Polynesians, and an unlimited assortment of crosses among these; and the style of their dress was as varied as their complexion. Wandering, I found myself at the Palace Grounds, and this time the gates were open and the soldiers gone. On entering to find a seat in order to doze off the effect of the sea trip, I soon saw that I was not the only one who had sought for a nap in a park seat in lieu of unobtainable beds; one poor fellow telling me that he had been there all night. I must have dozed for several hours when I was awakened by a church bell, and guided by its tones, entered a magnificent house of worship, built of lava stone. To my great joy, I saw that I was in the midst of an assemblage of my own race; and although I did not know a soul in that packed throng, felt as though I was among well known friends. To me it was the most inspiring service I had ever attended. It was Easter, and the pulpit rostrum and choir gallery were exquisitely decorated with palm leaves, ferns and flowers in gorgeous array.

Never before had I beheld any thing so extravagant in decorations, even in California, and strange to say, the last hymn of the service sung was "America." It thrilled my very soul with love of home, and patriotism, and effectually cured my seasickness. Securing lodgings that afternoon in a private family, I decided to remain two or three weeks—and I am here yet. On going into the heart of the city next morning, I could not but notice the narrow unequal width of the streets and their crookedness, and the little narrow sidewalks (if they could be dignified by that name) with their offsets in some places

ending abruptly against brick and stone walls.

Noticing strange looking vehicles occasionally coming along the streets, each drawn by a pair of under-sized donkeys, and dignified by the name of the Hawaiian Tramway Company as shown on the sides in large letters, I hailed one of them, and on entering, noticed that it was one of the antiquated "Put your fare in the box on entering and ring the bell when you wish to get off" pattern of street cars. Opening the front door, I asked the Portuguese driver who, like the donkeys, was also undersized, to take me to the end of the line. When he asked which end, I replied, "Any end," as long as he did not require me to go too near the business end of his donkey engine which, by this time, through the general exertion of the driver with his worn-out stick, was getting up a frightful commotion. One of the donkeys was galloping stiff-legged, his hind stanchions lifting the height of the dashboard at every jump, the other donkey was going at a pull neck trot with his head and ears down, while the general clanging of trace chains and the car itself, lurching wildly from side to side as if in imitation to the galloping donkey, presented a combination terrifying to the nerves.

As I had noticed no evidence of alarm on the countenances of the other passengers, although they were holding on like grim death, I did not attempt to jump, and concluded, that it was all in getting used to it.

I had noticed a portly Hawaiian lady holding on to the bell strap for some time, when suddenly she pulled it with great force and the bell rang at the wrong end of the car. On account of the terrible racket the car, donkeys, and driver were making the latter named part of the combination failed to hear the bell. Two of the passengers volunteered to help the old lady by going to the front door, but this was a perilous undertaking, for we were moving by this time at a high rate of speed in almost every direction. By heroic efforts however, in hanging at the door which would not open, the driver discovered that something seriously was

investment, and that such a system properly operated would carry 1000 passengers to where he carried ten now, he replied with a wise laugh, that his service had proved adequate to accommodate such of the public as choose to ride on his trams, and that the popular fad in Honolulu was to ride in hacks. Even the natives, said he, who earned \$6.00 per week would spend \$4.00 of it to ride in hacks and live on the other \$2.00. And indeed one could see these rubber-tired one-horse hacks going in every direction, whirling around street corners, but like Pain's trams always turning to the left.

Deciding that by owning a wheel I would have less Pain in my travels about the streets of Honolulu as I found it too expensive to join the popular fad of going in hacks, I bought one, but soon found that on account of the fearful conditions of the streets which were cross rutted and full of depressions, that I was going like a bucking horse, on my wheel. And as every one turned to the left I found myself in all kinds of mixups, one time having to jump and cling to the neck of a horse to keep from being run over.

There was but one section of level street, less than two blocks long on Vineyard to which I frequently went, ten blocks out of my way, for the privilege of having a little comfort in riding. Going along the streets upon warm days, one used to encounter nauseating odors in most parts of the city, occasioned by the poor sanitation, there being no sewers.

The Post Office was only open through limited hours of the day, and one going to the delivery window on the arrival of a steamer, would have to stand in line for half or three fourths of an hour, to receive mail. There was no free delivery, or letter boxes to drop mail into.

Such was Honolulu five years ago. But the wheels of progress were already at work for the live American was here with his tools and instruments, and the conservative "whatever we do we do well" Englishman to assist.

Many substantial business men who had resided here for years and who had been handicapped through adverse leg-



MATLOCK CAMPBELL.

the matter. He therefore brought his car to such a sudden halt by some kind of lock brake which he applied, that the rear end, wheels and all, raised six inches off the track, coming down with a bump. Then, as the driver, with stocial countenance, opened the door to inquire the cause of the commotion inside, I noticed that the aforesaid mentioned galloping donkey had been flung around end for end, turning the limited harness, wrong side out, so great had been the momentum. It is but just to say that the portly lady had been carried over two blocks past her street.

The driver, after disentangling his telescoped donkeys, drove on until he found himself opposite a fruit store where he leisurely tied up and as leisurely went to the store. He selected a bunch of bananas and purchased same, and as leisurely returned eating his fruit as he came back, all of which time took at least five minutes.

In thus relating my first tram ride in Honolulu, I have not exaggerated what was the common every day experience of a great many passengers. I have gone two blocks in these cars when the wheels were off the track, after a storm, which had been occasioned by sand washed on the rails. And I have seen well dressed ladies and men too, when we got so stuck in the mud that further progress was impossible, dutifully take off their shoes and step off into water and mud two feet deep and vanish in the darkness as we were coming home from church.

After I had been in Honolulu a few weeks, I found myself one day seated beside a heavy bearded fellow passenger and said to him, after having gone through some nerve wrecking experience in consequence of the cars antic, that I hoped people of Honolulu would soon possess a decent car service. I was promptly informed that I was talking to Mr. Pain, the manager of the Hawaiian Tramways Co. Upon my asking him why in the name of common humanity he did not install an electric system, suggesting that it would pay him better dividends than any sugar

isolation of an unstable government were unable to better conditions. And McKinley's authorization of annexation which had been made the year before, had been hailed with joy.

And what has been accomplished? The narrow, crooked, uneven streets have been straightened and widened, and miles of them have been beautifully macadamized, curbed and lined with concrete sidewalks. Dozens of magnificent and substantial business blocks some of them five and six stories high, that would grace any up-to-date American city on the mainland, have replaced the old one-story wooden shacks. The city has been sewer and cross-sewered from end to end, and the best sanitary laws in the world put into operation, rendering it next to impossible for epidemics and germs of disease to thrive as formerly.

With the free letter delivery system which has been installed, one has mail delivered at the doors in the remotest parts of the city, and instead of having to take half a day off as formerly to go down town to post a letter, one can drop it into a box on any block, and the Post Office is kept open night and day.

But most to be appreciated of all is the street car service with its solid road beds laid with \$5 lbs. to the yard rails, and its unique palace cars which glide along smoothly like a fast sailing yacht, no "crickety crack snap, crickety crack snap," as one experiences when going over the rails on lines in coast cities. And these cars which fairly terrify the city streets, and running every ten minutes on most of the lines, carry 1000 to Pain's ten, and this in the face of the fact that there are 10,000 less people in Honolulu today than five years ago. If one wishes to stop at this street, he has only to reach his hand a few inches and gently push the button. No craning of the neck, and wailing straining of the body to catch the conductors attention as in coast systems. But not all improvements, that have been under efficient control of public



Residence of J. G. Pratt, Pacific Heights, 9 Rooms.

every direction constantly, have been accomplished without the use of the port revenues, which amounted to hundreds of thousands yearly. These sums formerly went to help fill the common pot but with annexation have gone to Uncle Sam's coffers at Washington. Where did all of the money formerly go to in the good old times and for what purpose was it used? Small wonder there was a Revolution of 1893.

In closing this summary, too much praise cannot be extended to Governor Carter, who has proven himself, by his high executive ability and noble ideals, to be fully able to cope with the problems of reorganization which he has so fearlessly undertaken.

The present regime is not so picturesque as the old perhaps, but more practical.

Schools, Public and Private

Concerning the interesting topic of the nationality of pupils in the public schools, Territorial Superintendent of Schools A. T. Atkinson writes as follows in the annual report of Governor Carter to the Secretary of the Interior:

It must be understood that in classifying the nationalities of pupils or in dividing them by nationalities a very large number of them who are not so classed should be classed as Americans, it having been a custom in the islands to divide the population according to descent, even though the birth have occurred on the islands. This the third or fourth generation of British residents of the islands for that length of time are still classed as British, though the last generation occurring after annexation would make them American citizens. Of course, all Hawaiian and part Hawaiians are American citizens, and a very large number of the young Asiatics have the same claim.

There is a tendency to complain because Asiatics are educated in our public schools, and the complaint would be justifiable if we were educating those who were not, in the mass, to be voters in the future. The bulk of the Asiatics that are being educated in our public schools are those who will become voters in the future. It has been the aim of the department to get rid of such Asiatics in the schools as simply go there to learn English at an advanced age, say 16 to 17, and the success of the department in this direction has been satisfactory. In some cases teachers like to take in the elder Asiatics because they are very amiable and make good students, but this has been very sternly repressed. It is necessary that future voters should be educated and trained by American methods; otherwise they will be unable to vote intelligently. What we have to do here is what is being done on the mainland, and that is, assimilating a heterogeneous population and making Americans of them.

The number of Hawaiians of unmixed blood in the schools has remained practically stationary, though there is a slight decrease. In 1902 there were 4,903; in the report for 1903 the number was 4,893; the present year the number is 4,877, only a decrease of 26 during the two years. On the other hand, there has been a considerable increase in the number of part Hawaiians; that is, children whose parentage is partly Hawaiian and partly some other nationality. Last year they were reported as 3,018; this year they are reported as 3,234, an increase of 216. In course of time the Hawaiians of mixed blood will be evidently equal, and perhaps even exceed, the Hawaiians of unmixed blood. Adding the part Hawaiians and the Hawaiians of unmixed blood together, we have now in school 8,111 pupils of Hawaiian parentage, as against 7,911 in school in the year 1903.

The Portuguese children in school very nearly equal the number of Ha-

Nationality of Pupils attending schools in the Territory of Hawaii.

	Public.	Private.	Total.
Hawaiian	4,121	756	4,877
Part Hawaiian	2,253	981	3,234
American	560	317	877
British	129	76	205
German	167	154	321
Portuguese	2,937	1,408	4,345
Scandinavian	58	67	125
Japanese	2,453	437	2,920
Chinese	1,192	458	1,650
Porto Rican	446	110	556
Other foreigners	121	68	189
Total	14,467	4,832	19,299

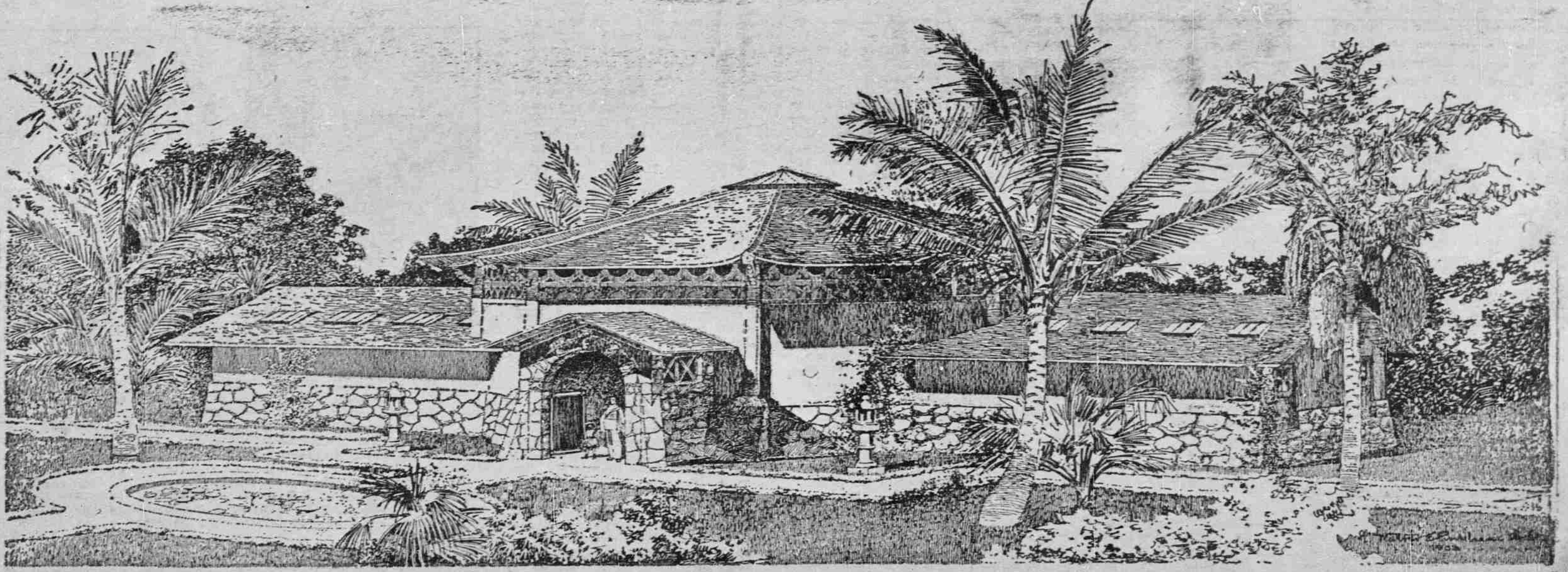
TERRITORIAL TEACHERS.

The year ending June 30, 1904, shows that there were 646 teachers employed in the services of both public and private schools—this against 633 engaged in education in 1903. Of these, 399 are employed in the public schools and 247 in the private schools. According to the last report, 386 teachers were employed in the public schools, and this gives an increase of 13 for the public schools and no increase for the private (Continued on page 16.)



Residence of Mrs. Yarnley, Beretania Ave.

The Aquarium at Kapiolani Park



Under the coconut trees at Waikiki there is growing up an institution that bids fair to carry the fame of Honolulu as far as any of the many distinctive island institutions have carried that fame in the past. And it has been carried far. One of the sights of Honolulu, indeed, has always been the fish market—not for the strange mixture of races that gather and chatter there, although that is a great sight for the outlander, but for the still more strange fishes that may be seen lying upon the marble slabs of the market stalls. The fishes of the tropics, rarely seen save when they have lost their first brilliancy of coloring through death, make one of the sights of the tropics.

Under the coconut trees at Waikiki it is now given to the stranger as to the citizen to see the fishes of the tropics in their native element, resplendent in all the glories of the paintings of nature. That is what the Aquarium established by the Rapid Transit Company on the line of its Kapiolani park extension has done for the city. It is a work that will not stop, for the Aquarium is a thing that once started, must continue to develop. Already there are shown in the tanks more than one hundred varieties of tropical fishes, and the number is being added to constantly. In fact, the Aquarium forms a continuous source of study and amusement to those interested in things marine, for the fishes change constantly. And while there are certain varieties that are there at all times new varieties are constantly added. And, seen in the water in tanks wherein the light is so managed as to reach all parts, the intimate life of the marine forms may be studied to the best possible advantage.

For a number of years past efforts have been made by certain public spirited citizens of Honolulu to establish an aquarium. Their efforts met with strong discouragement, but this was at last overcome. In the first place, it was desired to have a site near the beach and near the park. The aquarium would be dependent upon the sea for the life of the fishes, and dependent largely upon the crowds going to the park for its patronage. At last, through the liberality of a number of public spirited citizens it became apparent that the aquarium could be built, and an architect was at once set to work on plans for the present building. The Aquarium, as it stands today, was opened to the public on March 19, 1904, a number of invited guests being present at the opening. Speeches were made by Professor W. T. Brigham, Mr. Peck and United States District Judge Sanford B. Dole. Upon that occasion Mr. L. A. Thurston, being asked by L. T. Peck, president of the Rapid Transit, gave a brief account of how success had at last come to crown the effort to establish the Aquarium.

The Aquarium, said Mr. Thurston, was the result of the combined efforts of several people. The site had been donated by Mr. James Castle. Originally it was a portion of Kapiolani park leases, and was acquired by Mr. Castle, and for several years the company had been trying to acquire it. The Rapid Transit Company realized that quite a large amount of money was needed to build and stock the Aquarium, and until Mr. C. M. Cooke and his wife had

come forward with their generous offer the project was far from realization. Mr. and Mrs. Cooke had agreed to construct the building on condition that Mr. Castle give the land and that the Rapid Transit Company agree to stock and keep the Aquarium running. The plans, by Mr. Pinkham, were approved, and the building was constructed at a cost of \$8000. Mr. Castle gave the land, valued at \$7500, and the Rapid Transit Company spent \$3233 in preparing the exhibit and \$385 additional in stocking it. Mr. Thurston stated that bad weather during the past month had made it impossible for the fishermen to get specimens at sea or on the reef. There are now sixty varieties in the Aquarium and there are between four and five hundred specimens to be found in these waters. In a few weeks a larger representation of the fish of these waters will be secured. Some deep sea fish cannot be placed in the Aquarium, said Mr. Thurston, because they live at great depths, under pressure, and in addition are accustomed to more freedom than can be given them in limited confines.

Mr. Thurston explained further that the lease of the ground upon which the building stood was for seventeen years, and during that period the Rapid Transit would pay the running expenses of the Aquarium; at the conclusion of which term the fee of the land would revert to the Government. He hoped that the land would then be turned over to Kapiolani park, and that the Aquarium might then become a public institution. Four adjoining lots, upon which the lease expired at the same time, he hoped also might be given to the park, so that a sea frontage would be obtained for it.

The Aquarium building, as it stands today, is in the shape of a cross, its arms being 83 feet 10 inches, and its total length on the main axis, from the entrance to the end of the building, 165 feet. At the intersection of the arms an octagonal pavilion is formed, forty feet wide, in the center of which is an open tank, now filled with goldfish, mullet, carp and a turtle or two. The material used for the construction of the building is lichen covered flat stones for a sub-base with a buttressed stone entrance and cut voussoir arches. Above the sub-base the building is of frame. The building, as it is planned, admits of extension in the future, and standing as it does upon a lot that is open to the sea, affords the only public entrance to the beach at Waikiki.

The aquaria, in which the principal part of the fishes are kept, lead off from the central pavilion, and there are thirty-six of these all told.

The tanks are constructed of concrete and metal lath, 3 feet 6 inches wide, 3 feet 6 inches high and 5 feet long; on the corridor side, separating the visitor from the finny tribe, are plates of half an inch thick polished plate glass. The tanks are lighted from skylights formed in the roof above, the light penetrating through the water and showing off the beautiful tints and variegated colors of the fish in their element.

Back of the row of tanks a passage affords working space and conceals from view the attendants at their duties, caring for the fish, regulating the supply of air or water, or rearranging new exhibits.

Salt water is pumped from a well ex-

cavated in the coral near the beach into a 4000 gallon distributing tank, elevated sixteen feet. The water thus obtained is subjected to a filtering process, deleterious matter being separated by the passage of water through sand and coral.

From the distributing tank water is conducted through one and a half inch bored redwood pipe, with brass cock outlets for the supply of each of the aquaria, into which runs constantly a half inch jet of water, delivered at the surface through a nozzle or reducer, which admits air being sucked in and forced into the water of the tank in minute globules.

There is a separate piping system through which an auxiliary pump forces air into the various tanks, thus insuring water being perfectly aerated.

In addition to the main building a strong concrete tank has been built on the sea front of the property, and in this tank it is the aim of the Aquarium management to keep a large shark on exhibition at all times. As the larger varieties of shark do not do at all well in captivity this is a constant source of expense, but it is one that is borne cheerfully by the management because of the added value of the exhibit by the presence of the monsters of the deep.

Below is a partial list of the fishes which have been exhibited at the aquarium with a short description of each. The Hawaiian names only are given except in the few cases where there are English names for the same fish. The scientific classification is omitted.

Alaiki or squirrel-fish. Red and white longitudinal stripes; three to five inches in length; large eyes.

Alaiki lakea. Red, brown and white stripes; pointed head and length about three inches; similar to alaiki.

Aholehole. Flat, silver colored fish, four to six inches.

Aweoweo. Red, mottled with white; four to eight inches. Large schools of these fish are frequently seen in the harbor.

Awa, or milk-fish. Slender, white fish six to fourteen inches in length; found in both salt and fresh water; one of the most common table fish here, the market sales in 1900 ranking fourth.

Akule or goggler. White belly, bluish back and very large eyes; average length about eight inches, market sales in 1900 were third, the number sold being 224,033.

Akikole. Slender, brownish fish with long red bill; length about six inches. **Amaama** or mullet. Slender white fish with gray back; has coarse scales and flat head; principal food fish of Honolulu; market sales for 1900 were 1,001,571 or four times the number of any other variety.

Awa auu. Long, slim white fish, very similar to the awa but more slender.

Catfish. Reddish brown fresh water fish with broad, flat head.

Carp. Coarse scaled, gray; fresh water.

China-fish. Dark brown, mottled with black; imported from China and found in many fresh water streams as well as in rice and taro patches; often attain a weight of fifteen pounds.

Goldfish. Fresh water fish of brilliant red color; six to twelve inches in length.

Hilu. White body with back of yellow, brown and black stripes; size four to fourteen inches.

Humuhumu or trigger-fish. Flat, brown fish with pointed head and with eyes set well back from mouth; six to twelve inches.

Humuhumu nukunuku apuaa (trigger-fish). White belly, reddish brown back; has broad black band running through eyes diagonally across body; two V-shaped bands of yellow next to tail; average length about eight inches. A very handsome fish.

Humuhumu nukunuku lei. Brownish fish with yellow band on head just back of eyes which gives it the name "lei".

Humuhumu elele. Black trigger-fish with turquoise blue stripes along base of fins; length about eight inches.

Humuhumu nukunuku hia keokeo. Black or reddish brown with white fins edged with black (the ladies ask for the fish with the chiffon fins); pink tail with white band around base; six to ten inches.

Humuhumu. Dark brown trigger-fish with black band back of eyes.

Hinalea. Slender fish about three to six inches in length; color a dark brown with dark blue head and wide orange band back of eyes.

Hinalea luahine. Reddish brown; scales tipped with lighter brown; white tail bordered with black.

Hinalea lolo. Brown fish with turquoise blue markings on head and body.

Hinalea lili. Peacock blue-fish with pointed beak; length about eight inches.

Hilu lauli. Turquoise blue; length twelve inches.

Hilu kea. Brown body; green markings on head; about half the body next to tail is covered with bright purple spots; tail a brilliant orange; length six to twelve inches.

Halohalo (parrot-fish). Turquoise blue and white, fourteen inches long and weighing about four pounds.

Hee or squid. Has oval shaped pouch in which are located the digestive organs; prominent head and large eyes, eight tentacles on the under side of which are two rows of discs or suckers; these are used for clinging to the rocks and in catching their food. The largest one exhibited at the aquarium had a spread of six feet.

Kupipi. Flat fish, gray in color with large black spot at base of tail; about six inches long.

Kupoupon. Slender, with round body; white belly, brown back flecked with red and yellow; eight to fourteen inches long.

Kumu or goat-fish. Bright pink with deeper tinge along back; weight from one to four pounds.

Kihikihik naapio or Moorish idol. Flat fish about the size of the palm of the hand; marked with alternate bands of black and yellow; has sharp and powerful beak; dorsal fin tapers gradually into a long, graceful white plume. Much admired by tourists.

Keke. Slender brown fish about three inches in length.

Kala. Flat body of a bluish gray tinge; sharply forked tail both extremes of which taper gracefully into small streamers about two inches in length; eight to sixteen inches in length. This fish is noted chiefly for the horn which projects about one and a half inches from the head.

Kalaholo. Similar to kala but with darker color and shorter horn.

Kole. Small flat fish of dark brown color; yellow eyes.

Kaku or barracuda. Slender white fish with dark back and large mouth; six to fourteen inches.

Kaaha. Flat fish; light brown in color with white band around head.

Kawakawa or bonito. Oval shape, coming to point at head and tail; bluish tinge mixed with gray; weighs six to ten pounds.

Lauvililili. Small and flat; bright yellow, thickly covered with small black spots.

Laenihl. Gray and white with dark blue markings; horn on top of head which stands up when fish is angry or frightened; six to ten inches.

Lauvililili nukukoli. Slender fish of brilliant canary yellow; length about ten inches.

Lehua. Red and white; red bands are same shade as the lehua blossom from which it is supposed to derive its name.

Lapakihi. Rather a flat shape with broadest part of body just back of head, giving the appearance of having a hump on the back; marked with alternate bands of gray and black running diagonally across body; length about twelve inches. A very odd fish.

Lai or mackerel. Slender silver fish about a foot in length; skin has a brilliant gloss which shines like satin.

Lauhau or butterfly-fish. There are about ten varieties of the lauhau five of which have been on exhibition at the aquarium. The prevailing color of all is yellow, but the trimmings of the different species are of a great variety of colorings; shape is flat and they are all of small size.

Manini or Surgeon-fish. Flat in shape with length of about six inches; body a dark gray, crossed with narrow bands of dark brown.

Mana loa. Gray body with darker back and mottled with white.

Maomao. Four to eight inches long and flat; dark blue with black bands running around body.

Moano or goat-fish. Slender body marked with red, black and white patches; six to ten inches.

Maili. Reddish brown flat fish, two to six inches in length.

Moi. Silver color with darker back; mouth set back from end of nose; six to twelve inches.

Malolo or flying fish. White body with rich blue back; length from six to fourteen inches; has wings with a spread equal to about the length of the body; caught almost entirely by Hawaiian fishermen.

Mano or shark. White belly and gray back; length thirteen feet.

Naimai. Brown body with bar of orange just back of gills; six to twelve inches in length and flat.

Nunu. Bluish gray color; body long and slender with head about one-fourth the length of body; very small mouth; one to three feet.

Nohu. Dull brown color; large head and mouth; length four to ten inches;

when lying still has much the appearance of a piece of rock.

Nenua. Flat fish with very small mouth, bluish gray in color; length ten to sixteen inches; width about half the length; weighs from two to six pounds.

Oopu. Small brown fresh water fish. Ohi or file-fish. Yellow and brown, covered with black spots; has horn on back with rough edge like a file; two to four inches long.

Opole. Red covered with white spots, orange tail tipped with red; four to ten inches in length.

Opule lauli. Turquoise blue, mottled with dark blue; tail yellow tipped with blue; six to twelve inches.

Opule hue or balloon-fish. Brown covered with white markings; poisonous except when carefully dressed; six to eighteen inches long; when angry it blows up like a toy balloon.

Opule kala or porcupine-fish. Gray, covered with black spots; large head and mouth with eyes about the size of a cow's; body covered with long spines; blows up like the opule hue and when blown up the spines stand out like a porcupine's quills, making an excellent protection; feeds on shell-fish.

Opule pahu or box-fish. Rectangular shaped body, very hard; small head and mouth; brown in color and covered with white spots.

Opule moa. Same shape as opule pahu, has dark blue sides and yellow marks on head and tail.

Oili lopo. Flat, brown fish with black tail; two to four inches.

Opelu or mackerel scad. Slender body of white, with bluish back; six to twelve inches in length.

Olani. Light green body with horizontal bands of reddish brown, and cross stripes of same color; four to six inches.

Omaka. Brown, tinged with orange; large mouth; six to twelve inches.

Opule kai. Gray, covered with red spots; large head and mouth; prominent eyes; always found lying close to rocks.

Palani. Brown and flat; has blue line along base of fins and a blue tail; six to twelve inches.

Pualu. Similar to palani, but without the bright coloring.

Panuhunahu. Coarse scales; brown with gray spots; six to eighteen inches long.

Pakii or sand-fish. Sometimes called flat-fish. Belongs to the flounder family; body flat with fins running around edge; eyes are raised above body to such an extent that when buried in the sand the eyes are still exposed. Visitors often overlook this fish on account of its resemblance to the sand.

Pala. Brown flat fish about three inches long.

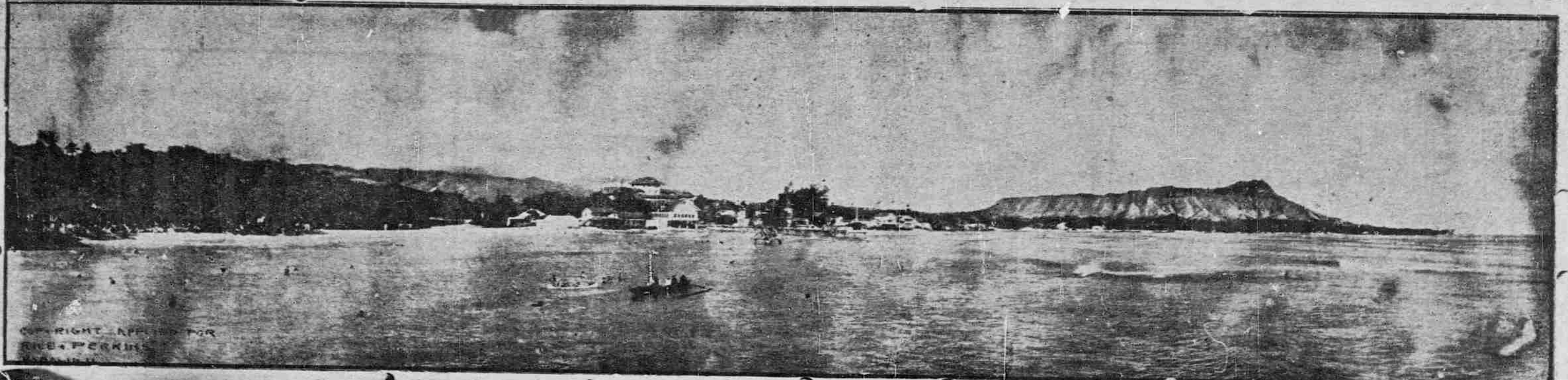
Poke. Black with white spot on side; about three inches long.

Pinao kai. Gray, mottled with black and orange spots; has wings similar to the malolo; six to twelve inches long.

Papiopio (young ulua). White body tinged with blue along back; fins are either yellow or blue; six to twelve inches.

Pakukui. Flat in shape; black body with large orange spot next to tail; fins are black, orange and white; tail is orange, tipped with white; six to ten inches long.

(Continued on page 13.)



DIAMOND HEAD AND WAIKIKI BEACH.

Thrum's Retrospect for 1904 Splendid Street Car System

(FROM THRUM'S ANNUAL.)

As intimated in the last Annual, political tension was at white heat toward the close of the year over the County Act, which was passed to take effect January 4, 1904. The Supreme Court had ruled against one point therein in a case brought before it, and upon a subsequent test prepared and presented by the Bar Association, in which several reasons were argued against its validity, on one of which, that relating to the tax provisions, the act was declared unconstitutional and void. This opinion, which was unanimous, came several days after the county government officials had entered upon their duties as required by the act, pro forma, pending the decision, when, on its rendition, January 13th, the business and general community breathed freer, and Territorial officials that had vacated their posts resumed their responsibilities.

Advocates of this incubus on the progress of the Territory were not slow to threaten appeal to Washington, and for some reason as yet undiscovered, the Governor surprised many of his friends by his expressed solicitude for county government for these islands. Fortunately, Congress did nothing about it, though at the extra session of the Legislature here, to provide "ways and means" and to legalize retrenchments, even to school teachers' salaries, the Governor was empowered to appoint a commission to draft a county bill for the consideration of the next Legislature that would be likely to hold together, of which commission H. E. Cooper is chairman.

THE EXTRA SESSION.

Early in the year the necessity of retrenchment in the current expenditures of the government became the announced policy of the administration, and public opinion was divided upon the necessity of an extra session in consequence; discussions waxed warm over the advisability or otherwise of such a step. While the public realized the difficulty that confronted the administration through the altered laws and failure of the County Act, little confidence was felt that the House would act any different than in the sessions of 1903, both of which were notorious for expense and delays. Nevertheless, the Governor called it together, and through fear of opinion at Washington if further proof of Hawaiian legislative incapacity was shown, it was not only tractable to the Governor's desires, but finished up the business required of it in two weeks' time, convening April 6th and ending on the 19th. Kumale, the obstructionist, tried his tactics of former sessions, but became amenable to reason—for a wonder.

THE DEFIANTS.

Mention was made in last issue of the questionable schemes of certain members and officers of the Legislature for which they were on the inquisitorial rack before the grand jury. In its aftermath of a trial before the court, Kumale, the aspirant for speaker and renegade Republican, and Enoch Johnson, his committee assistant and legal advisor, were each found guilty of gross cheat and sentenced to a year's imprisonment, from which an appeal was entered. Pending a hearing, the notorious egotist had the effrontery to seek a nomination, and stumped the country in the recent campaign, in the interest of Home Rulers, to lure the unthinking voters. Meheula, clerk of the House, implicated in the scandalous proceedings, got clear; a sadder and wiser man.

THE RECENT CAMPAIGN.

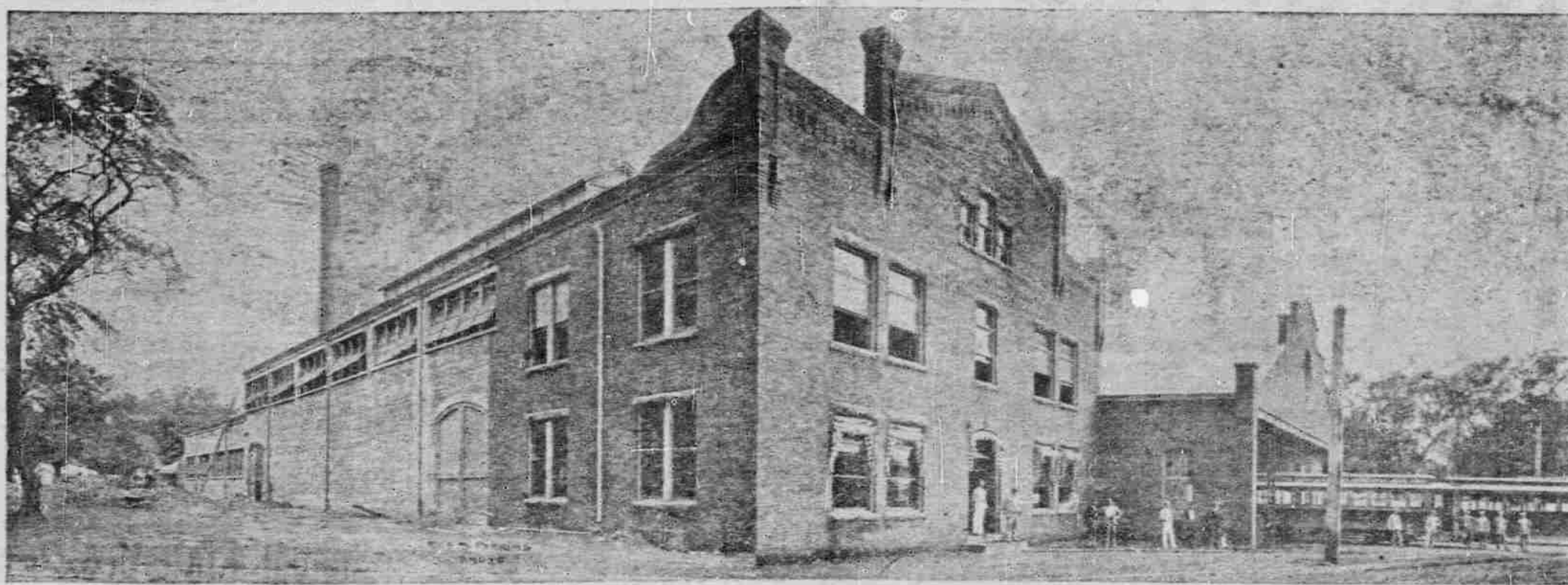
In the recent political campaign—a three-cornered contest—it became early manifest that the Home Rulers were suffering serious defection from their party ranks, and not a little effort was made toward fusion with the Democrats to oppose the increased strength of the Republicans. The work of the campaign showed less of party platform effort than it did of personality respecting Governor Carter and his administration, and the qualifications or otherwise of the respective candidates for Delegate to Congress.

Early work in the Republican ranks in the campaign, gained much by its thorough organization, so that on summing up the results of the election, it was found that the whole party tickets, for Senators and Representatives in all the districts of the islands were returned with large majorities, save one lone Home Ruler representative, from the Kona district of Hawaii. Delegate Kaho was also re-elected by a large majority over the Democrat and Home Rule candidates.

Through a blunder in forwarding the returns from two of the out-districts, it will not be possible to tabulate the complete returns of the election for use in this issue.

MORE DEFALCATIONS.

The community is pained again this



POWER HOUSE OF THE HONOLULU RAPID TRANSIT AND LAND CO.

year in the revelations of officials and others who have not proven true to the trust reposed in them, the public offices affected being the Water Works Bureau, the Land Office under the late commissioner, and the clerk's office of the High Sheriff. The Hawaiian Trust Co. and the ticket office of the Oahu Railway Co. are sufferers also from "trusties gone wrong."

AN EPIDEMIC OF CRIME.

In the double murder of Mrs. Parmenter and daughter in 1903, the long protracted trial for which in one case resulted in acquittal, and the deferred trial in the other, justice still cries aloud unappeased, encouragement seems to have been given for like acts of criminal violence, that their frequency, for these islands, has alarmed the community.

Interference with Japanese gamblers on Kauai caused the murder by dynamite of G. H. Glennan, constructing engineer of the new Makaweli ditch. After much patient search the dastardly midnight assassin was tracked down and confessed. Other murders have since occurred on Kauai, Oahu and Hawaii, assailants and victims being Japanese.

In this city a likely Chinese insurance clerk was foully murdered by a fellow countryman for declining to loan a sum of money, and a sailors' saloon fracas caused the death of a negro named Francis. The murder of S. Edward Damon, on the highway near his own premises by a Porto Rican, without provocation, save an order to replace a stolen lantern, aroused public feeling at the menace this indolent class of people are to the community, and the high esteem in which the victim was held throughout the islands, called forth their sympathy to the stricken widow and parents. The murderer was caught the same night, and upon action of the grand jury was brought to speedy trial, found guilty, and has suffered the death penalty.

And while in the midst of this trial a young Hawaiian magnified some trivial domestic trouble as to fancy himself warranted in the deliberate shooting of his wife in the presence of his mother. He was captured the following day, and the case has come to trial, but the law's delay under some technicality has already got in its work.

PUBLIC IMPROVEMENTS.

Public improvements throughout the Territory have been prosecuted as far as means from the loan placement of \$1,000,000 effected last year allowed, and Secretary Atkinson is now absent upon the financial mission of advantageously placing the remainder of the loan for the completion of plans contemplated.

The work that has been pushed under the loan act embraces certain road and sewer works, bridges, wharves, dredging, water works, etc., and more would have been accomplished during the year but for legal technicalities and law's delays on several contracts. The new Royal school building is at last nearing completion, and is a creditable and spacious structure of two stories that the educational needs of this city has long demanded.

Lahaina, Maui, and several other sections of the islands have also had their needs attended to in this respect, though all are not yet completed. On the water front new and substantial wharves are in progress. A clear area now prevails below Queen street from the foot of Nuuanu to the new Inter-Island Co.'s wharves along River street beyond Maunakea, by the demolition of the old custom house and the removal of Brewer & Co.'s recently-constructed brick warehouse to the upper side of Queen street, near the site of the original foundry and flour mill.

WEATHER CONDITIONS.

With the exception of a remarkably rainy spell in February, the weather conditions throughout the islands for the year has been even and beneficial to the agricultural and grazing interests. The "dry spells" and droughts of summer, usually experienced, gave place to well distributed showers.

The rain storm of February was un-

usually long and severe, causing much damage in various parts of the islands. In the rice districts the crops were seriously injured, as were also many sections of cane fields. Oahu felt its severity more than the other islands. The Oahu railway not only suffered much from injurious washouts, but also from the interruption of traffic for two weeks. Bridges and roads, more than landings, in many parts of the group suffered materially. The average rainfall of the various stations reporting was 24.87 inches, being four or five times the normal.

REAL ESTATE AND BUILDING.

Activity in the real estate market has not been manifest during the period under review, notwithstanding the almost universal drop in values despite the effort of interested parties to keep as near to boom figures as possible.

The lethargic condition of trade has been apparent in the real estate and building lines, of which the unusually large number of foreclosure sales is painfully evident, many of them not satisfying the amount of the obligations thereon.

The extensive administrator's sale of the properties of the late W. L. Wilcox, in various parts of the islands, attracted much attention and, considering its volume, realized well for the times.

With the exception of several stores, etc., in the Chinese and Japanese quarters of the city, there is nothing new in business structures to record for the year. The Odd Fellows' building, which was described in our last issue, was completed and dedicated, July 30th, 1904. We give an illustration of the edifice herewith, executed expressly for the Annual.

Much solicitude was felt early in the year at the formidable inroads of the "leaf-hopper" pest, causing serious damage to the young cane of several plantations in various districts of the islands. Vigorous measures were adopted

to overcome the evil and search made for their natural enemy, which, fortunately has been found by Messrs. Koebel and Perkins in Queensland, Australia, whence this species of pest is said to have been introduced. Two consignments of the parasites have been received, but under great disadvantages owing to the distance and the disconnection of steamers. Still, successful breeding is in progress, and with other natural enemies existing here, will, in time, overcome the danger. This variety of pest we have here is said to have been first noticed by Mr. R. C. L. Perkins in the latter part of the year 1900, though serious damage therefrom was not manifest till two years later.

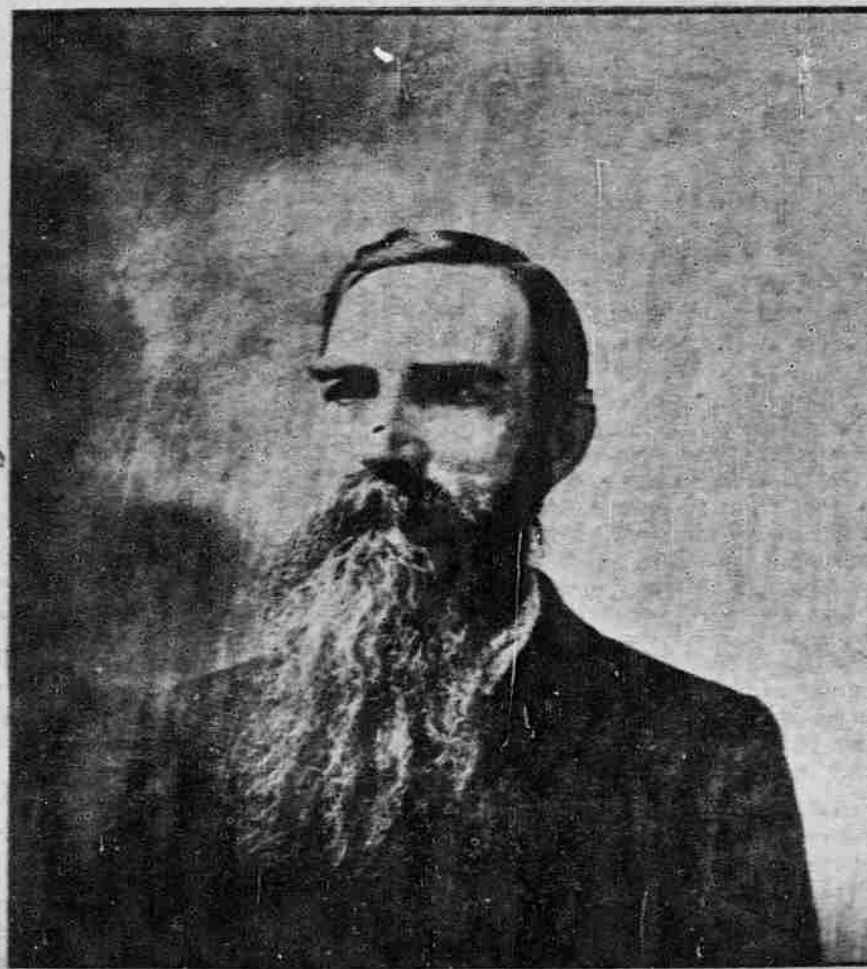
For this and other reasons the Planters' Association have materially enlarged its crops of scientists in the agriculture, chemistry and entomological divisions, and with government co-operation, in part, is working on both eradication and preventive lines to overcome the various enemies of our agricultural effort.

In the early part of 1904 a union of interests of the Haiku and Paia plantations and several adjoining planting interests were effected, forming the Maui Agricultural Co.

The controlling interest of Alex. Young, Esq., in the Pepee plantation has been purchased by Brewer & Co., Ltd., the purchase carrying with it the agency.

Maui Sugar Co., a Chinese corporation at Huelo, Maui, has become, through foreclosure proceedings, a thing of the past.

Puna Sugar Co. of Hawaii and the Hana plantation of Maui are in the hands of receivers, with the prospect of the former being disposed of in the near future at public auction.



T. G. THRUM.

Some twenty-five new cottages have been erected since last review, mostly residences in the College hills and Kaimuki tracts, and south Beretania and King streets. Improvements lately lie mostly in this direction.

DIVERSIFIED INDUSTRIES.

Much interest has been manifest in the press of the Territory throughout the year in their frequent reference to small farming and advocacy of diversified industries, a subject of vast importance to these islands, and which has now the scientific knowledge and aid of both the Federal experiment station corps and the Territorial Bureau of Agriculture and Forestry to assist intelligent effort in this direction.

It is pleasing to note the establishment of fruit canneries on Maui, and in Hilo and Kona, on Hawaii, and that substantial shipments of preserved pineapples, etc., have been exported this year to supplement those from Waiawa, on this island.

Banana culture for export is making onward strides, the shipments from Hilo giving encouragement to the enterprise since special provision for their care in transit has been made. The shipments from this port for the year will be creditable, and growers are advised to increase their efforts and widen their market. A recent Bulletin (No. 7) of the Experimental Station, devoted entirely to the Banana in Hawaii, is the first monograph on this subject, prepared for the practical purpose of getting the best out of the soil, whether of home consumption or export variety.

Sisal and vanilla culture are becoming more firmly established. Of the former product the pioneer company at Ewa is increasing its area from 750 to 1,000 acres; the Hawaiian Agricultural

Co., at Kau, is devoting 500 acres to its culture; the Haiku Sugar Co., on Maui, has 200 acres in already, and will add more. Others in that section offer encouraging inducements for home-steaders to do likewise. Molokai, as reported last year, and Kauai are also interested therein.

The tobacco trial in Hamakua, mentioned in our last issue, is reported to be making such progress as meets expectation, and in due time will be heard from.

Coffee interest is reviving. Louisville's Hamakua shipments for the season's crop being satisfactory as to quantity if not in price. Kona and other parts of Hawaii give also favorable reports, and in the Oloa section attention is being turned again to this product.

Rice culture in the islands is finding itself severely handicapped in the competition met with by the heavy importation of Japan rice of late, and the apparent preference the Japanese show for it over the local production.

A new enterprise established during the year has been the tannery of the Metropolitan Meat Co., situate at Kailua, where will be manufactured from island hides and skins all classes of shoe, lace, rice and other leathers. The tannery employs fifteen people at present and the concern plans to place goods of the highest grade on the market to meet all local requirements.

PLANTATION MATTERS.

The first export therefrom was made November 30th in a trial shipment of several grades.

The Honolulu plantation is pioneer in the field with a sugar refinery outfit, having introduced a complete refining plant, for auxiliary use as circumstances warrant.

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INCREASED WATER SUPPLY ON MAUI.

September last witnessed the completion of the additional water supply by the new Koolau ditch for the irrigation needs of the extensive cane fields of central Maui. Mention was made in the last Annual of this work as in course of construction by M. M. O'Shaughnessy, C. E. It was begun in March, 1903, and was completed and formally opened September 16, 1904. In its total length of ten miles, 39,282 feet is in rock tunnel, 10,179 feet in open ditch and 692 feet in flume. There are no less than 38 tunnels of an average length of 1,040 feet, the longest one of the series connecting the Honoumuli and Keanae valleys, measuring 2,712 feet. The tunnels are eight feet wide in the clear, seven feet high and when carrying a depth of five feet of water will convey 85,000,000 gallons daily.

The Honokohau ditch is another enterprise brought to completion during the year, whereby waste streams of the Honokohau valley are brought out on to the Kaanapali lands, and in to Lahaina for the extending cane fields of the Pioneer plantation.

Wailuku plantation is now planning the construction of a ditch to supply them with some 42,000,000 gallons of water per day from Loo and other valley streams, for irrigation purposes.

The Oloa Sugar Co.'s agency has been transferred during the year to the banking house of Bishop & Co., and its management placed in the hands of Mr. John Watt, formerly of Honolulu.

The Hawaiian Sugar Co., at Makaweli, has contracted for a duplicate of the Punne mill, described elsewhere in this issue, to be completed in time for the next year's crop.

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OFFICIAL CHANGES.

Numerous changes have occurred in various departments of the Government during the year, partly through expired commissions, necessity of economy in administration, and other causes.

On the Supreme Bench Hons. A. S. Hartwell and F. M. Hatch were appointed to succeed Hons. C. A. Galbraith and A. Perry, whose term of office expired.

Jas. L. Holt succeeded to the Assessorship, vice J. W. Pratt, appointed Commissioner of Public Lands.

A. J. Campbell, Esq., was appointed Treasurer, vice Hon. A. N. Kepoikiki, appointed to succeed T. W. Kalua as Judge of the Second Circuit, Maui.

Judges Little and Edings of the Fourth and Third Circuits, Hawaii, were succeeded on the expiration of their terms by C. T. Parsons and Jno. Mathewman.

Marston Campbell, Assistant Superintendent of Public Works, is succeeded by J. H. Howland. Dr. C. B. Cooper, as President of the Board of Health, is succeeded by L. E. Pinkham, Esq., and Chas. H. Merriam succeeded Thos. G. Thrum as Register of Conveyances, resigned.

High Sheriff A. M. Brown and his deputy, Chas. F. Chillingworth, recently resigned, are succeeded in office by Wm. Henry, late warden of the prison, is High Sheriff, and Wm. T. Rawlins as his deputy.

BUSINESS CHANGES.

In the early summer the Hawaiian Hardware Co. closed out its business to T. H. Davies & Co. and the Pacific Hardware Co.

In August the old established firm of Castle & Cooke vacated their premises at the corner of King and Bethel streets, which they had occupied since the summer of 1856, and moved into the Stangenwald building, on Merchant street, occupying all the offices on the main floor, which had been specially fitted for their use.

The Oriental Bazaar, that occupied

(Continued on page 14.)

It has often been remarked by visitors to Honolulu that the electric car system was the most complete possessed by any city of the size of this in the United States. And that is true. Literally, every part of the city can be reached by the electric cars, and the service is at intervals sufficiently close to serve public convenience. It is not necessary, at this time, to write a history of the Rapid Transit line. The system has been built up so lately that all the people know how it has been done—and the cost of it is a matter that is of little public concern. The result, which does concern the people, is the best service that it is possible to get, and at the minimum rate. The transfer plan makes it possible to ride all over town, from end to end and from one side to the other, for a single five-cent fare.

The lines, with the mileage operated and the number of cars on each line, will be seen by the following table:

	No. cars operated.	No. miles operated.
King St. line.....	9	7.47
Hotel St. line.....	5	4.81
Fort St. line.....	4	2.26
Alakea St. line.....	2	1.20
Beretania St. line.....	2	2.52
Waialae Road line.....	1	2.47
Manoa Valley line.....	1	1.74
	25	22.59

Number passengers carried eleven months ending Nov. 30, 1904, 6,099,584. Passenger car mileage eleven months ending Nov. 30, 1904, 1,352,272.22.

	No.
Rolling Stock—	
Pass. cars seating 30 persons.....	13
Pass. cars seating 40 persons.....	20
Pass. cars seating 50 persons.....	10
Pass. cars seating 58 persons.....	2
Total.....	45

The King street line extends easterly from Fort street along King to the McCully tract and Waikiki Road to Diamond Head. Along the route may be seen the Capitol (formerly Iolani Palace, the residence of King Kalakaua and Queen Liliuokalani) and the judiciary building, before which is a very fine bronze statue of the first Kamehameha; the Kawaiahao Church, the oldest native church in Honolulu, built of coral, the entire work in the construction having been performed by the Hawaiians; the Kawaiahao Seminary, a school maintained for the education of Hawaiian girls; the "Old Plantation," where can be seen a grove of very fine coconut trees; Thomas Square, a public square having historical interest, as it was at this place in 1845 that Admiral Thomas lowered the British flag, raised and saluted the Hawaiian flag when returning the sovereignty of the islands to the Hawaiians. After crossing the McCully tract the line enters the Waikiki road, a very fine boulevard, following the same to Waikiki, where are located the Moana Hotel, the Royal Hawaiian Hotel Annex and the Alexander Young Hotel Annex, and "Ainalah," the residence of the late Princess Kaiulani; Kapiolani Park and the Aquarium, where can be seen one of the most beautiful collections of fishes in the world. The Waikiki beach is a fine bathing resort, the temperature of the water being from 68 to 70 degrees all the year.

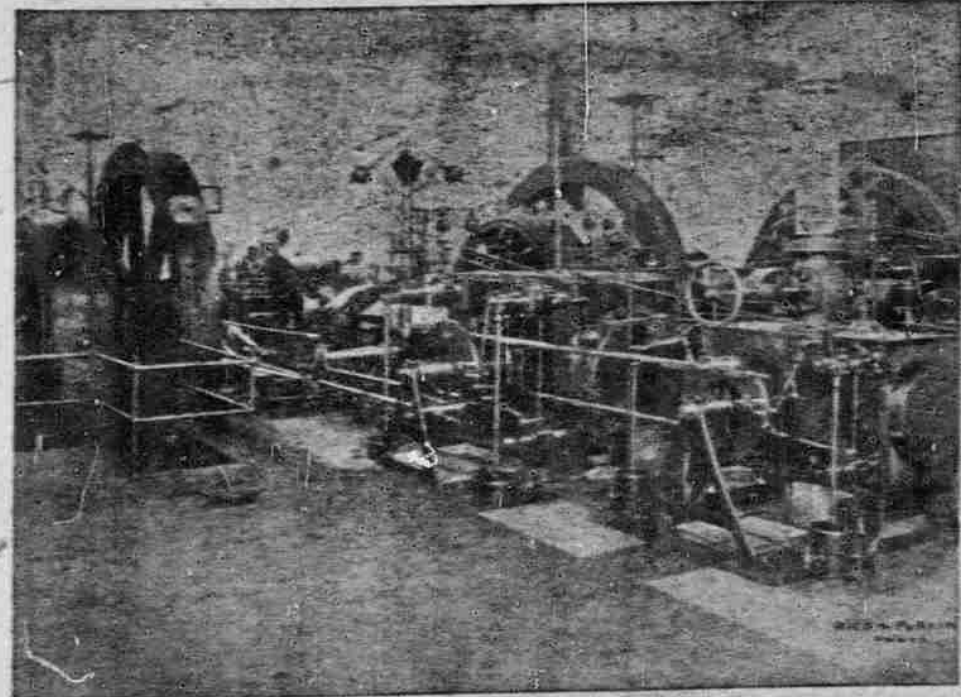
Westerly the King street line follows King street to Kailua, passing the fish markets, the depot of the Oahu steam railway, the Kailua school and the Kamehameha schools for Hawaiian boys and girls. These schools were liberally endowed by the late Princess Bernice Pauahi Bishop. In the grounds is the Bishop museum, where a most complete ethnological collection pertaining to the Polynesian races may be seen. This institution is open to visitors on Fridays and Saturdays.

The Hotel street line traverses Liliha street, King street from Liliha street to the Nuuanu stream, and Hotel street through the Chinese quarter to Alapai street, Lunalilo and Pensacola street, Wilder avenue and Alexander street to Pawaia junction, where it connects with the King street line to and from Waikiki. The main entrances of the Alexander Young Hotel and the Hawaiian Hotel may be most conveniently reached from this line. The Public Library, the Y. M. C. A. and the Masonic Temple occupy three of the four corners of Hotel and Alakea streets. Farther on at the intersection of Alapai street will be found the power station, car sheds and work shops of the railway. The line from this point gradually ascends, skirting the slopes of Punchbowl, an extinct crater, until it reaches Wilder avenue, at the eastern end of which is located the buildings and campus of the Oahu College and Punahou Preparatory School.

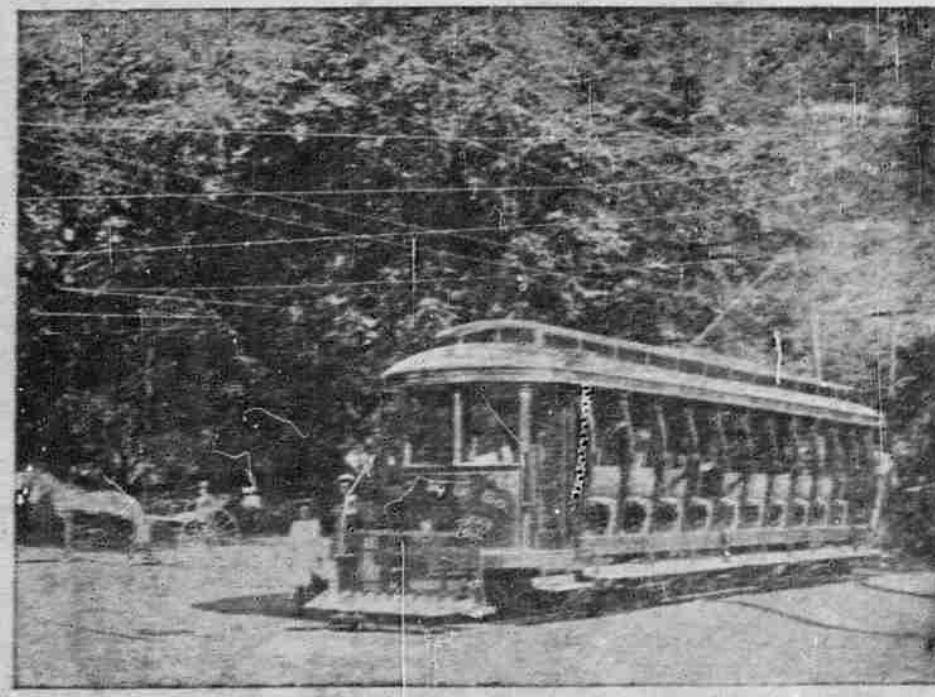
These institutions are supported entirely by endowments and tuition fees and are governed by a president and board of trustees. From the little tot in the kindergarten to graduation from the college the classes are graded. The location is most delightful and healthful.

The Fort and Nuuanu street line extends from the Honolulu Iron Works on Ala Moana (Ocean Road) along the harbor front, passing the United States

(Continued on page 15.)



RAPID TRANSIT CO.'S DYNAMOS.



A RAPID TRANSIT CAR.

PETROLEUM, ITS USE AS A FUEL

THE use of petroleum for fuel for ocean steamers is but a new departure in the industrial world, and yet it has already grown to such proportions that ships are built to carry oil across the sea, and here in Honolulu there is tankage for the storage of millions of gallons of oil.

Petroleum, before the exploitation of the California fields, was of too high value for lighting purposes to be thought of as fuel. The Eastern oils, even to this day, are not used largely for purposes other than lighting, although the production has increased every year since the first well was drilled on Oil Creek in the days immediately preceding the Civil War. It was the oil boom in Pennsylvania, leading to the accumulation of vast fortunes in very short periods, that first drew attention to the California oil fields. The story of their development reads like a romance—a romance with decidedly commercial flavor, and an intensely commercial climax.

The earliest settlers in Southern California had noted the presence of large springs of "ground oil" in the hills about the Mission of San Buenaventura and in the Punete Range on the seaward side of Los Angeles. They could not well help noting it, as the oil oozed from the soil in many gulches, forming pools of sticky asphalt in which it was no uncommon thing for horses and cattle and sheep to mire.

Even at an earlier period navigators in the small craft that plied the waters of the Santa Barbara channel had ob-

the oil could be used for lighting purposes. Nobody, in those days, could conceive of any other use for petroleum and so the California oil fields were allowed to languish.

It was known, of course, that there was plenty of oil in the hills of Ventura and Los Angeles counties. Speculative scientists still wrote, occasionally, about the oil on the waters of the Santa Barbara channel. The government took advantage of this to find a stretch of still water upon which to test the speed of new war ships when Secretary Whitney began building up the navy. But nobody thought of turning to account this vast store of wealth running to waste under the hills into the sea. The Pennsylvania measures still produced oil, and new fields were found and exploited in western New York,

was to make a kind of thick, yellow oil as different from the white product of the eastern works as lard oil is from benzine. It was demonstrated that the California oil made a first-class lubricant, but that was all—and there was not enough machinery in all California to take the lubricator that one good well would yield.

THE FUEL PROBLEM.

And then came a new man into the field, a somewhat visionary man, with the idea that the fuel problem of California—a very vital problem indeed in a land where wood is scarce and where there is no coal—might find its solution in the use of oil. E. A. Edwards did not make a fortune, as he deserved to do, by the first application of the ap-

the mountains to the coast at the town of San Buenaventura.

The oil steamers that ply from the Hawaiian Islands to the coast are loaded at the wharf at Ventura or at Oleum in San Francisco Bay, with oil that is run directly from the wells in the mountains into the tanks on board the vessels.

Oil operators have even put down wells beneath the sea, and at Summerland, in Santa Barbara County, may be seen long wharves reaching out into deep water, and on the extreme ends of these wharves the tall derricks that mark where the pipe goes down to tap the wealth that has been for ages oozing out of the rocks at the bottom of the ocean.

The oil business of California, in fact, has grown to such proportions that the Standard has become alarmed at its development and for the past few years has been making the most strenuous efforts to secure control of that field, as it already controls the business in the East.

The California railroads long ago began to use oil as fuel for their locomotives. Not an engine on the Southern Pacific system in that State, aside from the switch engines in use about the yards, now uses coal—and the use of oil is almost as extensive on the Santa Fe. The latter railway even sprinkles petroleum along the line of its road across the desert to keep down the dust—and, indeed, the oil has come into use largely everywhere in Southern California for this same purpose. An oil road, sprinkled about once a month for a year or two, becomes almost as good as an asphaltum paved highway.

The production of oil is increasing in California, and its use mainly for fuel

is at Honolulu that the ships going from the mainland in any direction toward the westward must stop for their first supply of fuel.

School Statistics Of The Territory

The school laws of the Territory demand that all children between the ages of 6 and 15 must attend some school. Between these ages at the present time there are 16,897 children in school, as against 16,218 in 1903 and 15,525 in 1902. There are also 1,182 children under 6 years of age who are attending, for the most part, kindergartens supported by voluntary contributions. Of these a considerable number are Asiatics. Of course, the attendance of these 1,182 children is entirely voluntary, whereas the attendance of the 16,897 children between the ages of 6 and 15 is obligatory, and nonattendance can be punished by legal methods. Of those above 15 years of age there are 1,220 in school, as against 1,116 reported last year. Of these, 648 are in private schools and 572 are in public schools. The Honolulu High School, the Normal School, and the Lahaina agricultural school chiefly provide for those who are accounted for in the public-schools record. The elder pupils of the private schools will be found at Oahu College, St. Louis College, Kamehameha schools, and other establishments of the same class.

THE practical control of the oil business of California is now in the hands of two great companies, viz, the omnipresent Standard Oil Company and the Union Oil Company of California, although there are a few smaller companies free from their control, one being largely represented in Hawaii through the Pacific Oil Transportation Company.

The Standard made an attempt to get in to the Hawaiian market, but was unwilling to meet the prices quoted by the other two companies, which, at present, have a monopoly of the Hawaiian fuel oil business.

The fuel oil trade between California and Hawaii has already assumed vast proportions, although crude oil was first used for fuel in Hawaii in January, 1903.

In 1902 there was only one oil tank vessel on the Pacific Coast, the Santa Paula, a schooner barge of 8500 barrels capacity.

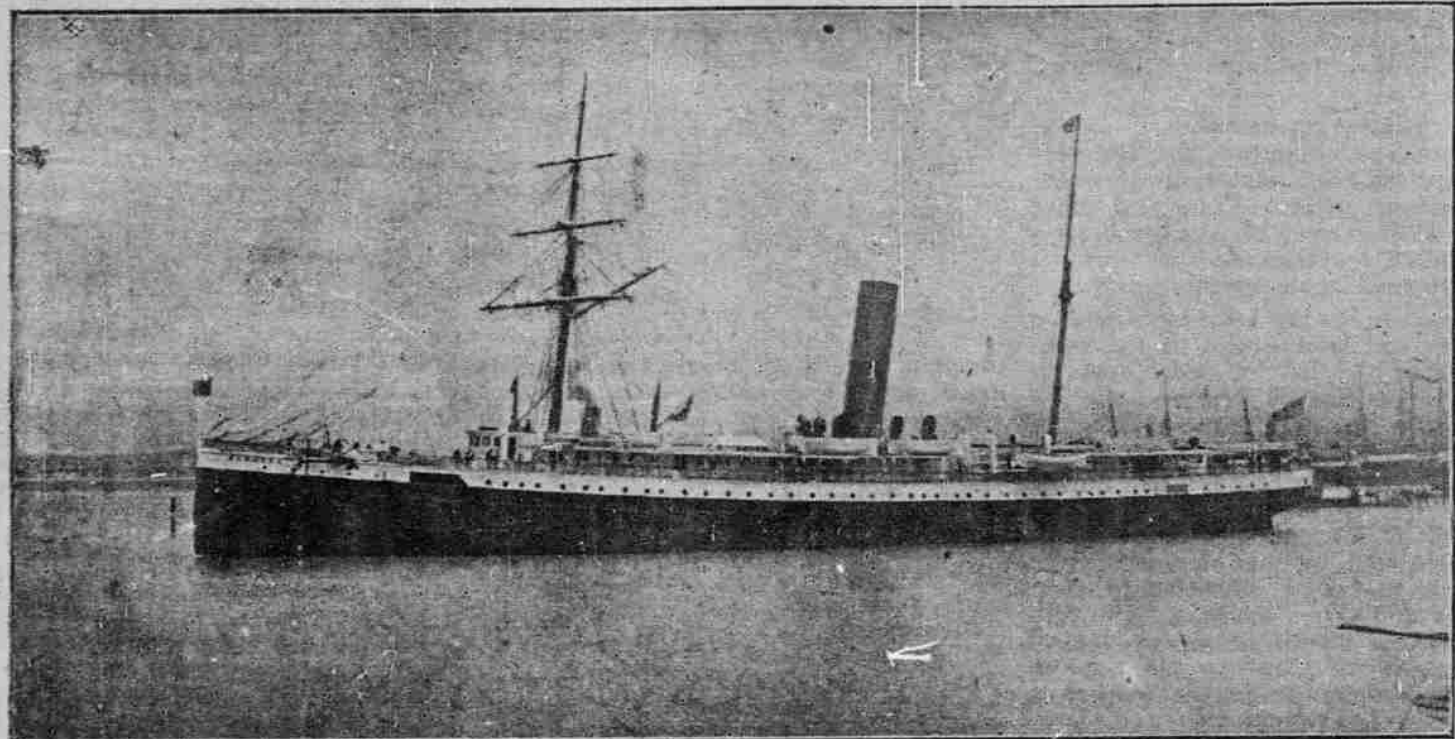
There are now seven in use by the Union and Pacific companies alone, mostly in the island trade, viz:

NAME—	Capacity Barrels.
Schooner Santa Paula	8,200
Steamer Whittier	11,000
Four-masted schooner Fullerton	16,000
Steamer Argyle	30,000
Ship Marion Chilcott	15,000
Steamer Rosecrans	20,000
Ship Monterey	24,000

A total capacity of.....124,200

Both of these companies have orders out for additional ships, which will be in commission during the coming year. The amount of money invested by the Union and Pacific companies in connection with the island trade alone, for pipe lines, storage tanks, ships and landing apparatus, is approximately \$2,000,000, and the investment is constantly increasing. The oil is stored in immense steel tanks holding up to 50,000 gallons each.

USE AS FUEL. So far oil fuel is being used in Hawaii only on the Islands of Oahu and Maui. The storage tank capacity on Maui is 135,582, at Kihai and Kahului, and up-



AN OIL BURNING PASSENGER BOAT—THE OLD-FAVORITE ALAMEDA OF THE OCEANIC LINE.

served the oil covering the ocean for miles in the sea south of Point Conception, lying upon the water in such quantities as to have an appreciable effect in moderating the force of the waves there during the winter season.

The development of the Pennsylvania fields led to the initial attempt to turn the California mineral oils to profit, and it was a Pennsylvania man who first tried to exploit what has within the past ten years become one of the greatest of the many sources of the wealth of the Golden Coast. It will be remembered that immediately following the war Colonel Tom Scott began to devote to the Pennsylvania railway that marvelous administrative ability which resulted in laying the foundations of what has since become one of the greatest of American roads. That was when the oil business was in its first glory, and the Pennsylvania road owed not a little of earlier prestige to its success in handling the oil carrying trade and the good fortune of its management in dealing in oil lands.

Colonel Scott, in fact, was one of the first Americans to foresee the great future of the American oil industry, and one of the first, also, perhaps, to see that the Pennsylvania oil fields would one day become exhausted. At all events, he was among the earliest of those who began reaching out for new fields, and the very first to attempt the exploitation of the California territory. Colonel Scott, like most men of great administrative genius, was a good judge of men. He selected as the man to represent him in the new oil region a man who had served in his office as president of the Pennsylvania railway, a young surveyor of Chambersburg of the name of Thomas R. Bard.

That man is now United States Senator from California, and the possessor of a fortune estimated to be well up in the millions, which fortune has been accumulated largely as the result of operations in the oil fields of California. Hon. Thomas R. Bard was at one time the president, and is still a large stockholder in the Union Oil Company of California. But that is to anticipate the tale.

SCOTT'S FIRST VENTURE.

Colonel Scott had purchased several large Spanish land grants in California, believed to consist of oil bearing lands, and the young surveyor, Bard, was sent to Southern California as his agent, with instructions to test the ground thoroughly and report as to its value as an oil territory to come in and supply the place of the Pennsylvania fields when those should be exhausted. This was immediately at the close of the Civil War in 1866.

Bard was not himself a practical well driller, but he was a practical man, with a large fund of hard common sense, and he had seen much of the oil business. Going at once to Southern California, as he had been instructed, he took up his residence at the town of San Buenaventura and proceeded to test the oil fields. He put down six wells, after the most approved Pennsylvania manner, the first of these at a distance of about eight miles from San Buenaventura in a region where great quantities of oil are produced to this day. In fact, all the Bard wells are in land that is productive now. The Bard wells all produced oil but it was a heavy, black stuff, with a base of asphaltum, entirely different from the light green oil that gushed from the sand of the Pennsylvania hills.

And then came the problem of handling of oil after it had been produced. Bard had demonstrated that there was oil in Southern California. He was not a chemist, and he could not show that

and Ohio and West Virginia.

And then, in the late seventies, came the second depression in Pennsylvania, following upon the earlier efforts of the Standard crowd to get control of the production and transportation of oil. Many Pennsylvania operators, men who knew nothing else but oil, were frozen out of the business in those days—and were too old to seek another kind of labor, although they were willing to seek their kind in a new field. Among these, no doubt, were some men in whose memories the operations of Tom Scott in California nearly twenty years earlier lingered as a kind of tradition.

Naturally, looking for a field for operations, the minds of these men turned to the old stories of Scott's ventures. And it was these men, coming into Southern California at that time by the hundred, who gave the oil business on the Pacific Coast the impetus that has led to the present splendid development. But they, themselves, met only failure.

The Scott interest, of course, had lapsed at the time of this revival, Scott himself was dead, his lands had been sold for the most part, and although Thos. R. Bard remained in Ventura county, it was as a large land owner on his account and not as the agent for Scott that he kept his residence there. Also, he had grown wealthy, but it was as a stock grower and farmer on a prize entirely apart from the oil business, entirely apart from the oil business. In fact, he seemed to have forgotten all about his oil-well boring experience, although he had not forgotten it, as the event proved.

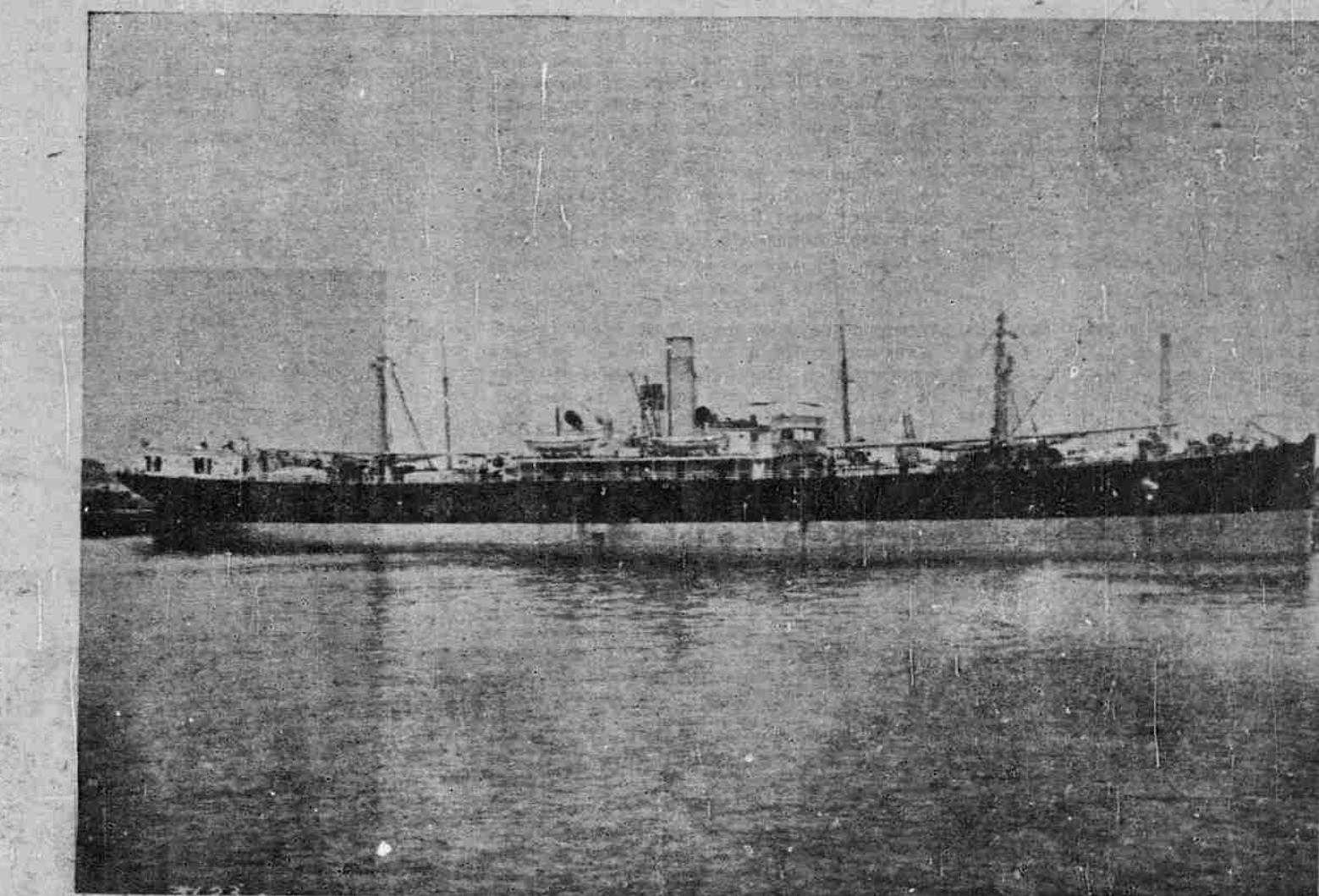
The newcomers into the California oil field found oil, as Bard had found it, but they found also the same difficulty that he had found in the handling of the product. Try as they might, they could make nothing that would burn in a lamp of the black, refractory stuff that oozed rather than gushed out of the ground, as the lighter paraffine oil gushed from the spouters in Pennsylvania. D. C. Scott, one of the earliest and not the least successful of these earlier operators, spent a fortune of his own, and several fortunes for other people, trying to refine California oil at Ventura, building some half a dozen refineries. And the best he could do

paratus to mix oil and steam for fuel purposes in substantially the same way as they are mixed now wherever fuel oil is used, but he gave the oil business of California that start toward success that was needed. From the crude machinery devised by Edwards in his little tinshop in the town of San Buenaventura is a long step to the splendid furnaces that furnish the heat for the grown-up child of his own brain. And yet it is that and nothing else.

With the successful use of oil as a fuel for all purposes proved to a demonstration, the long neglected oil fields of Southern California became at once of great immediate and potential value. Many of the Pennsylvanians who had come into the country made fortunes in oil, for its use as fuel grew and spread, and Thos. R. Bard turned his attention once more to the development of that source of wealth that had been the first cause of his settlement in California. The lands that he had acquired in the course of his business enterprises proved to be rich in oil, and presently he was ranked as a millionaire in a new generation of millionaires.

The Ventura and Los Angeles county oil fields were exploited. It was found that a stratum of oil-bearing sand lay under the hills of the city of Los Angeles itself, and the very fairest portion of the town was given over to a forest of greasy derricks, producing thousands of barrels of petroleum daily. Great oil measures were opened in the mountains of Kern county, and the Southern Pacific railway even built a branch road forty miles in length to accommodate the trade of the wells, carrying out oil in tank cars, and carrying in supplies to the drillers and squatters.

Vast fortunes were made, and are still being made in California oil. Pipe lines have been built from Kern county to the shore of San Francisco bay to carry the oil to tide water, to overcome the cost of shipment by rail, and from



AN OIL BURNING FREIGHTER—THE AMERICAN-HAWAIIAN LINER NEVADA.

purposes keeps pace with the production. In fact, its use increases rather faster than the production. Land that is recognized as possible oil territory, therefore, acquires added value from this prospective source of wealth to its fortunate owner. And this would be true, in the minds of thoughtful men, even though the use of oil as fuel were not increasing by the natural increase of manufacturing industries on the Pacific Coast of the mainland.

Fuel oil has just begun the commercial conquest of the Pacific—the ocean of the future. Only when it is in universal use on sea going steamers will the industry attain the true measure of its commercial greatness. In this greatness the port of Honolulu is destined to bear a very considerable share.

These figures show that almost the whole of the school population, according to the laws of the Territory, is being instructed.

AN ACCIDENT.

A spinster once who was antique
Daubed lots of rouge upon her chique,
But by mistake
She made a brake
And got a little on her bique.

The people saw the crimson stripe
And laughed until they all grew wique.
The spinster saw
What made them "Haw!"
And vanished with a fearful shriek.
—Chicago Chronicle.

wards of 1000,000 barrels of oil are kept on storage there.

The storage capacity at Honolulu on Oahu, in use and in course of construction, is 250,000 barrels, and upwards of 150,000 barrels of oil is kept stored in them.

The consumption of oil on Maui during 1903 was but small. It has more than doubled during 1904. The total Maui consumption during 1903 and 1904 was approximately 160,000 barrels.

The consumption on Oahu was 241,000 barrels during 1903 and 405,000 barrels during 1904.

This does not include oil supplied to trans-Pacific steamers, of which there are a constantly increasing number using oil fuel.

CONCERNS USING OIL.

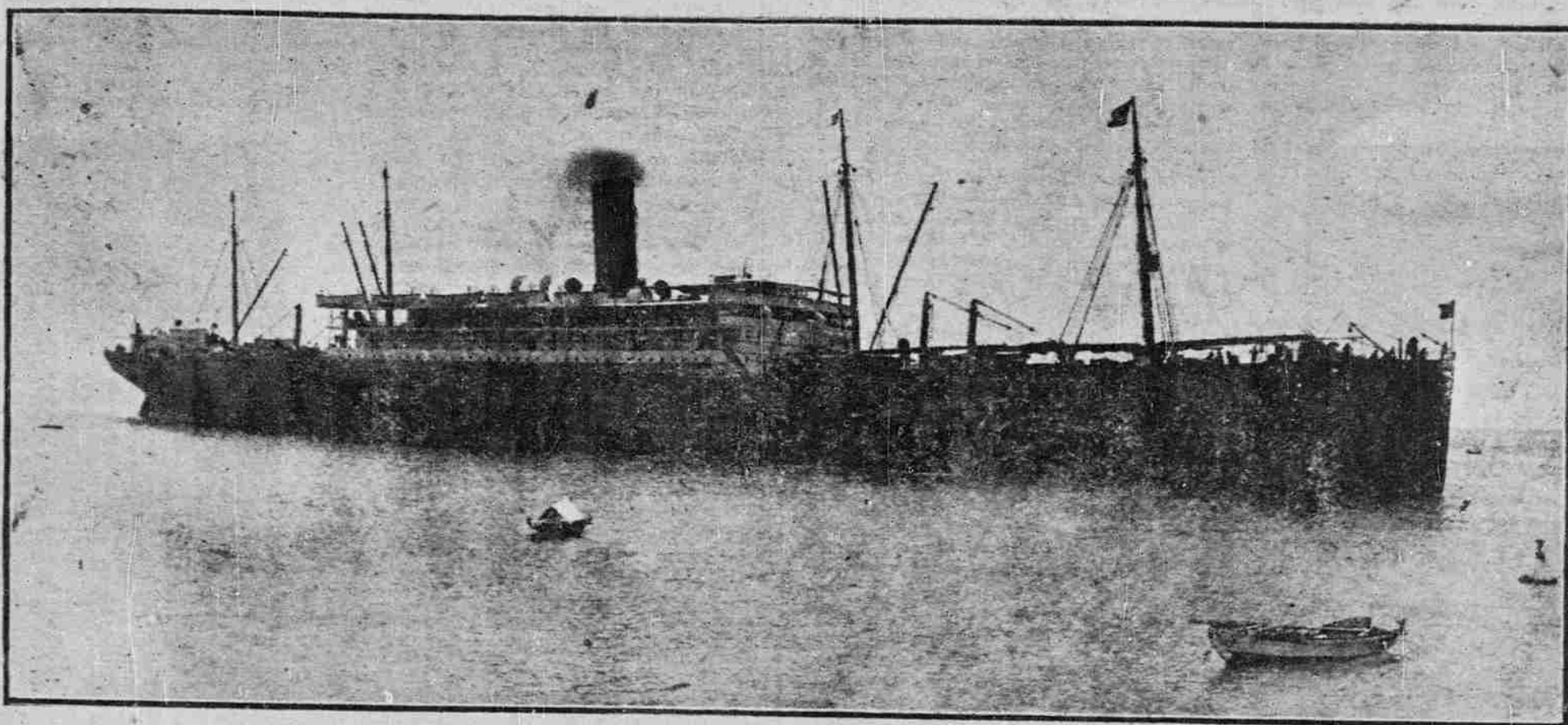
The business concerns using oil fuel in Hawaii are: On the Island of Maui—Haku Sugar Company, Pala Sugar Company, Hawaiian Commercial and Sugar Company, and Kihai Plantation Company.

On Oahu—Kahuku Plantation Company, Waihua Plantation Company, Ewa Plantation Company, Oahu Sugar Company, Honolulu Sugar Company, Oahu Railway and Land Company, Honolulu Rapid Transit and Land Company, Honolulu Brewing and Milling Company, Hawaiian Electric Company, Alexander Young Hotel, Cation, Neil & Co., Honolulu Iron Works, Hawaiian Pineapple Company, Pearl City Fruit Company, Hawaiian Dredging Company, Pacific Guano and Fertilizer Company.

The cost of the oil delivered to the consumers at point of consumption varies from \$1.40 to \$1.60 per barrel, according to quality of oil and location of point of consumption.

The efficiency of the oil as compared with coal varies from 3.57 to 4.25 barrels of oil as the equivalent of one long ton of Australian coal, showing a saving of from 25 per cent to 45 per cent in dollars, besides the additional cleanliness, facility in handling and elimination of hand labor.

The economy and incident advantages are so great that eventually all fuel users on any scale must use oil.



THE MONGOLIA, ONE OF THE BIG PACIFIC MAIL LINERS CALLING AT HONOLULU.

Thrum's Retrospect for 1904

(Continued from Page 13.)

prominent quarters in the Waity block, King street, has retired from this field to try "pastures new."

J. Hopp & Co., furniture dealers, etc., have recently moved from their old King street stand to spacious quarters in the Young building on Bishop street.

The City Market Co. has erected a structure at the corner of King and Keolu streets, and, with the recently established Chinese fish market near by, have materially affected the business of the Esplanade market.

At this writing negotiations are in progress looking to a change of ownership, or controlling interest, in the Volcano House Co., to be conducted in connection with the new Hilo hotel project of Geo. Lycurgus.

The Owl Drug Co. of Hilo is a thing of the past.

NAVAL VISITORS.

Toward the close of 1903 Honolulu was enlivened by the welcome presence of the U. S. Asiatic squadron, from Yokohama, under Admirals Evans and Cooper, consisting of three battleships, four cruisers, a collier and a supply ship, with their quota of some 3,000 men. The fleet remained here about two weeks coaling and taking on supplies, and affording liberty to the crews, which materially benefited the trade and social life of the city.

In mid-summer another visit of the fleet, under Admiral Glass, arrived from the "far east," en route on their northern cruise, comprising the Buffalo, New York, Concord, Marblehead, Bennington, Mohican and Albany. At the same time came the training ship Adams, from Samoa, and the new cruiser Tacoma from the coast, the latter vessel on a cruise in search of some unknown or lost island supposed to have caused the total disappearance of the U. S. Levant in 1858, which proved unsuccessful.

Among several foreign naval visitors during the year was that of the Italian cruiser Liguria, Duke of Abruzzi, commander.

DISTINGUISHED VISITORS.

Among the more prominent persons visiting Honolulu during the period under review is to be noted that of Dr. F. E. Clark, of the Christian Endeavor movement, on his round-the-world tour; Governor Taft of the Philippines, en route to Washington; Premier of Persia, en route to the States; Prophet Dowie, en route to Australia; Prince Pu Lun, of China, en route to St. Louis; the Filipino Commissioners (44) for St. Louis; Prince Luigi, Duke of Abruzzi, of Italy, and Prince Fushimi, of Japan, en route to Washington, most of whom were duly entertained during their brief stay, with many others of renown, including special war correspondents and artists, en route to or from the scene of conflict.

Prince Fushimi made his visit memorable in a substantial way by a donation of \$500 each to the Associated Charities and Japanese benevolent work of the city.

FIRE RECORD.

The fires of the city have been somewhat frequent, though seldom in any one case of great amount, the serious aspect of the situation is in the number of suspicious cases, which point strongly to incendiarism, especially in those of Chinatown and Kakaako.

Among the more prominent of these disasters were the residences of Geo. H. Robertson, in January, with loss placed at \$18,000; those of A. Coyne, Chas. Moore, and T. C. Maguire, in July; the Schuman Carriage Co.'s warehouse, in March, with damage of \$15,000; and the Aala lane block of stores, etc., in September, loss being placed at \$25,000.

In Hilo, the fine residence of P. Peck, Esq., was wholly destroyed by fire in the early part of the year, loss reported at \$22,000.

NECROLOGY RECORD.

This portion of the year's record seems to have claimed an unusually large number from the well known older residents of the islands, many of whom were prominent in their several spheres, as will be recognized among the following names: Horace G. Crabbe, Henry Waterhouse, W. H. Coney, Mrs. A. A. Haalea, W. E. H. Deverill, at Kauai; Mrs. J. E. Hildebrand, Geo. S. Harris, H. C. Reid, Mrs. Elizabeth Macfarlane, H. M. Whitney, Mrs. J. S. Reed at Hilo; Mrs. Alex. Mackintosh and Mrs. Hugh Morrison in Germany; Mrs. H. A. P. Carter, L. E. Swain, Hilo; Mrs. W. D. Westervelt; Gardner K. Wilder, Mrs. J. T. McDonald and Mrs. C. E. Banning in California; W. E. Beckwith

on Maui; Jules Reinhart, Hilo; Rev. Thos. Gulick and Saml. T. Alexander in Africa; Mrs. G. Rhodes, Capt. E. T. Cameron, S. Edward Damon, Wm. F. Lowe, I. D. Wicke, F. J. Wilhelm, and Jas. Renton, Kohala.

It will be noticed in the above list how large a number of island people have died abroad this year.

NECROLOGY FOR DECEMBER.

Wm. Blaisdell, died Dec. 18.

Dr. Henry Muson Lyman died at residence in Evanston, Ill., on November 26. He was born in Hilo, 69 years ago.

KAMEHAMEHA TOMB.

In June last was completed a new Kamehameha Tomb in the grounds of the Royal Mausoleum at a cost of some \$15,000, to which were removed from the mausoleum the coffins of R. C. Wylie, J. Kaleipahala Young, Fanny K. Kekelaokalani, B. Y. Namakeha, A. K. Kuniakea, Jane K. Lahilahi, Peter K. Kuniakalani, T. C. B. Rooke and G. K. Kuniakalani Rooke. Appropriate dedicatory services were held by Bishop Restarick, June 19th, which were attended by a large concourse of people.

SHIPPING MATTERS.

The Wilder S. S. Co. have added to their fleet of coasting steamers this past year their newly constructed boat Like-like, built especially for the requirements of island trade on the coast, and has been placed on the Molokai run. The Hawaii and Molokai have both been withdrawn and broken up.

Of the Inter-Island Co.'s fleet the steamer Hanalei has been sent to San Francisco for disposal.

The annals of the port records the arrival on May 15th, 1904, of the Pacific Mail Co.'s new steamship Mongolia, which entered the harbor and docked without difficulty. She was welcomed by quite a demonstration of bunting, steam whistles and music by the band.

MARINE CASUALTIES.

Marine mishaps around the islands have been fortunately unusually light this past year, but in the deep-sea service we have to note the total loss of the steamship Connemara, the first eastern cargo of the season, which left this port in February for New York, with a full load of some 2,500 tons of sugar, since which time she has not been heard of. The U. S. cruiser Tacoma was sent in search some months later, following her supposed course, but no trace of her was ever discovered.

Ship Emily Whitney, with coal from Newcastle for Makaweli, Kauai, ran into a hurricane January 1, and carried away all topmasts, necessitating putting into Sydney for repairs. One seaman was washed overboard.

Schooner Alice Kimball, formerly in the coasting service, and owned here, went ashore at the mouth of the Suir-law river, in the latter part of October last, and has become a total loss.

FLORAL AUTO. PARADE.

Thanksgiving day, 1904, was the time selected for Honolulu's first automobile parade, on which occasion some seventeen vehicles of the tonneau and runabout class entered in competition, with their floral decorations, for three prizes offered for originality and beauty of design. It was a spectacular success that was enjoyed by a throng of observers at Union Square, where the procession formed at 10 a. m. The route of parade was out to Kapiolani park, where the prizes were awarded by Hon. A. S. Cleghorn, one of the trio of judges, as follows: First prize, Japanese design, was won by Capt. Robt. Graham; second prize, red and white asteri, C. W. C. Deering; and the third prize, a dream of violets, went to Wilder. The procession then returned and returned to town and paraded for a time through the city.

The Aquarium at Kapiolani Park

(Continued from page 12.)

Pilihoa. Light brown head covered with dark brown spots; body striped with black, white and brown; four to six inches.

Palukulu. Coarse scales; dark brown; six to eighteen inches.

Puhi laumilo. Brown eel, covered with yellow spots; pointed head; one to three feet long and about two inches

Puhi. Very slim eel, about a quarter of an inch in diameter; body covered with alternate bands of brown and white, which give it the appearance of a snake.

Papal Kuwouvu. Hard shell crab; brown with red spots on back.

Papal kuhou. Brown shell crab covered with dark brown spots; most common variety sold at the market.

Uhu or parrot fish. Reddish brown, with very coarse scales and beak like a parrot; six to eighteen inches long and weighing up to eight pounds.

Uhu lauli. Same size and shape as uhu, but colored a deep blue.

Uhu, elele. Dark colored uhu.

Uhu, or lizard fish. Slender, sand colored, with large mouth; six to ten inches in length.

Ulu. Gray, with dark back; weight

A very handsome fish.

Ulu, or crawfish. Body a deep brown and striped with blue and white; eight to fourteen inches long, with feelers about the same length as body.

Ulu papapa. Dark gray body; no feelers; length about eight inches.

Weke. Slender gray fish with yellow bands on side; six to twelve inches in length.

Weke ula. Similar to weke, but has fins of black and white.

In addition to the fish above mentioned there are on exhibition sea turtles and three varieties of fresh water turtles; also three kinds of wana or sea urchin. Some fine hermit crabs are also shown, the shells of several being covered with sea anemones. A large shellfish about twelve inches in diameter has recently been added to the collection; and new and interesting species of sea life are constantly being put on exhibition.

Splendid Street Car System

(Continued from page 12.)

Naval Station, to Fort street, the principal retail street of the city, to Beretania street, near which is the Roman Catholic Cathedral, and Nuuanu avenue to Nuuanu cemetery and Royal mausoleum, where the remains of the Hawaiian Kings and Queens and members of the Royal families have found a last resting place. Some of the finest residences in the city may be seen on Nuuanu avenue.

The Beretania street line runs from Fort and Allen streets up Fort to Beretania, and easterly on Beretania street to the Paawa junction, where it meets the Waikiki cars to and from the city. At the corner of Fort and Beretania streets will be found the No. 1 Fire Hall, where a complete fire-fighting apparatus is installed. The Episcopal Cathedral, Central Union (Congregational), Methodist and German Lutheran churches are located on Beretania street. The Kaahumanu Public School for boys and girls is also located on this street.

The Alakea street line runs from the foot of Alakea street, along this street,



PRIMITIVE GRASS HOUSE.

es in diameter.

Puhi kapaa. Gray and brown eel with small, pointed head; said to be a vicious biter; about thirty inches long.

Puhi uha or Conger eel. White belly with gray back; has large flat head; about four feet long and three inches in diameter.

Puhi wela. Slender eel; yellow and brown.

Papai moala. Brown crab with very large, reddish brown claws.

Papai unooa. Red crab, oval shape and about six inches in diameter; has the appearance of being cooked.

Upapahu. Light brown transparent fish; fins tipped with black; two to four inches in length.

Uu. Bright red in color, with very large black eyes; two to eight inches. Generally caught at night.

about twenty pounds.

Uku. Gray color, large eyes and mouth; similar to akuie; six to twelve inches.

Unamaled. Bluish gray body, tinged with gray; head yellow and black; dorsal fin black and white; anal fin orange; tail black and gray, tapering into two delicate streamers, about three inches in length; bright orange spot near tail; three to ten inches in length.

Emma and Punchbowl streets, to the entrance to Pauoa Valley, connecting with the King street, Hotel street and Beretania street line every ten minutes.

The Manoa Valley line connects with every alternate car on the Hotel street line at the corner of Wilder avenue and Punahou street. This line runs up the Manoa Valley, famous for its magnificent mountain scenery and salubrious climate.

The Waialae Road line has its western terminus at Paawa junction on King street, and its eastern terminus at the crest of the ridge overlooking Waialae, affording a magnificent view of the mountains, Koko Head and the sea. This line connects with the King street, Hotel street and Beretania street lines every thirty minutes.

Communication With Mainland.

There are a number of first-class steamers running between Honolulu and San Francisco, but only one of them makes its terminus at this port, the others merely touching here while en route to the Orient or Australia. The Pacific Mail Line now has the Korea, Siberia, Mongolia, and Doric, with the Siberia, Mongolia, Coptic, Doric and Manchuria. The Toyo Kisen Kaisha Line withdrew its steamers owing to the war between Japan and Russia. This is a service to Hawaii only to the extent that the Japanese steamers carry mails, writes J. S. Rothwell in the Governor's annual report to the secretary of the Interior.

The Oceanic Steamship Company has the Alameda, Sierra, Sonoma, and Ventura calling here, the last three named going on to Samoa and Australia. Practically, then, there is only one steamer, the Alameda, that is employed in regular service between Honolulu and San Francisco.

Transportation charges are at present, by steamer, \$75 first class either way, or \$135 for the round trip; second class, \$50; sailing-vessel rate, \$40. The rate is the same to San Francisco whether the passenger travel direct by American steamer or by British steamer to Vancouver and thence to destination by rail. The same is true if the passenger for Vancouver, British Columbia, go direct by British steamer, or through San Francisco and by rail to the North. For twelve months efforts have been directed toward securing reductions of fares, but without avail.

In addition to the passenger lines mentioned, the Hawaiian-American Line sends freight steamers around the Horn between Honolulu and New York, and has one vessel in the trade between this city and San Francisco. The various lines of sailing packets between this port and San Francisco and New York employ some 20 vessels, and a large number of deep-water ships are called for each year in addition.

Have You a Cold?

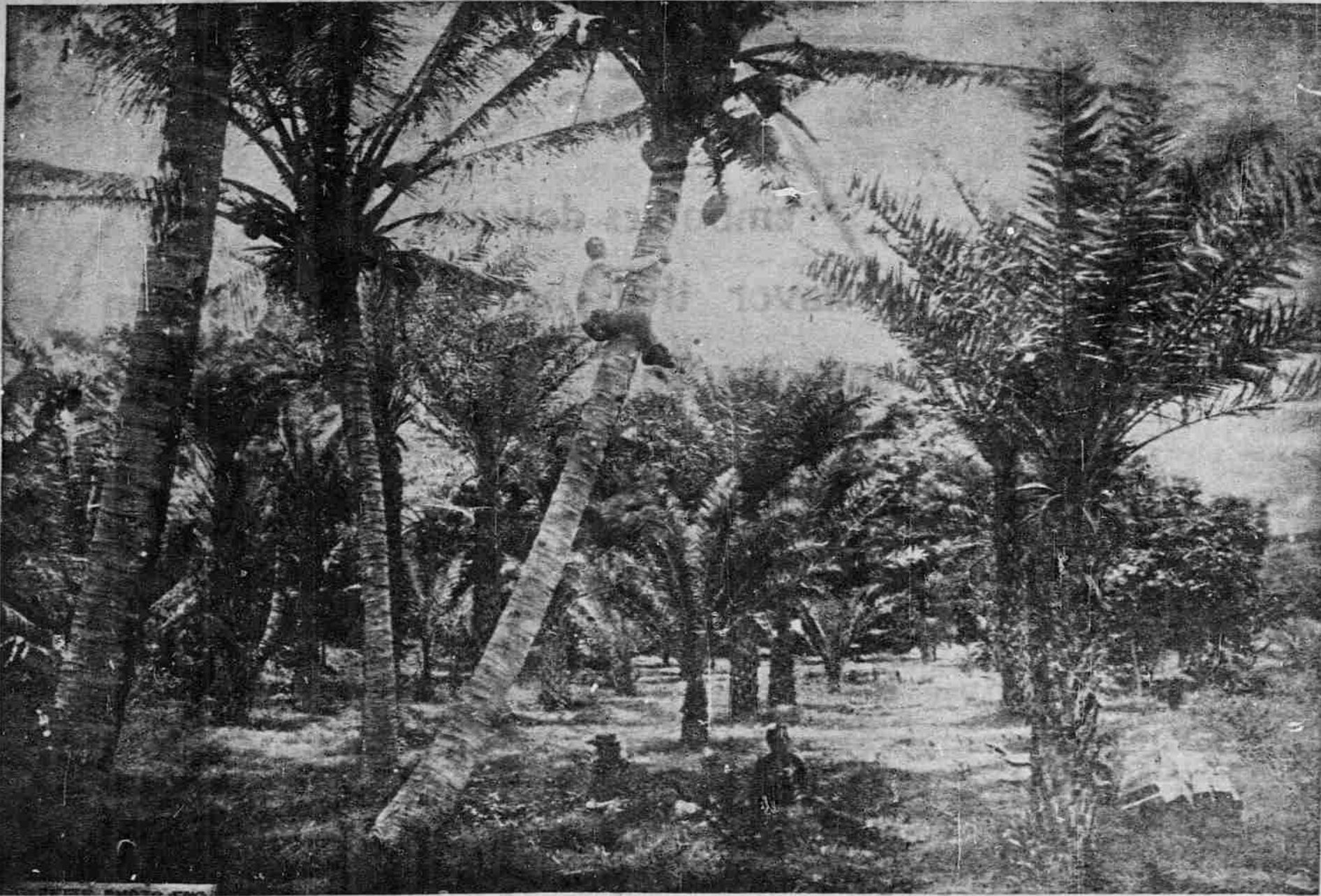
A great many people are down with them. Perhaps you don't know what to take to cure quickly and pleasantly. Why not try the well known

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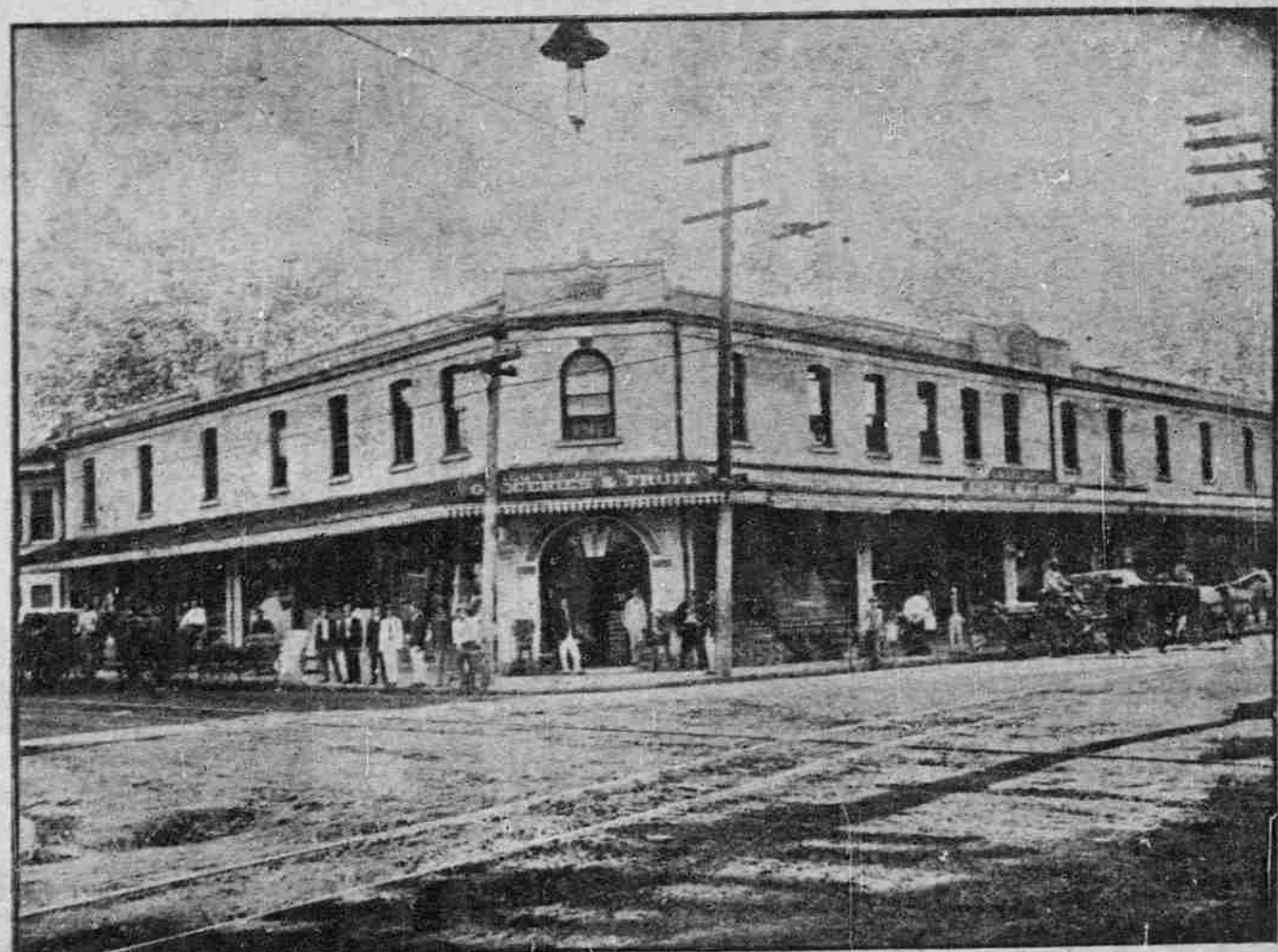
There is no guess work about them. They are a specific for colds, grippe and dengue. Nip the cold at the first symptom. Then it's easy. Don't allow it to "run its course," because there isn't any reason for it.

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PALMS AT AINAHAU.



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THIS WELL KNOWN PROVISION-STORE had its beginning in 1901. It was founded through the enterprise of a few Chinese merchants of the city. These men believed that there was room in Honolulu for a real live store that deals in foodstuffs. And the volume of business done by this company since its inception has given the management no cause for regret that they had launched out in this commercial enterprise.

The company's main place of business is located on the corner of Beretania and Alakea streets; it has a well-stocked Grocery Department, a Meat Market, a Fruit stand, and a Vegetable stand. The company also has several stalls at the new fish market on King street, where fresh fish of all kinds, in addition to meat and vegetables, are sold.

The Grocery Department is well stocked with things that satisfy the palate as well as hunger, and things that nourish the mind as well as the body. New goods arrive by every incoming steamer from the Coast to take the place of those sold. And buyers can always depend upon getting what they want, as the company has special agents in San Francisco to select the best that the market has to offer.

In the Meat market, adjoining the Grocery department, may be found meats of all kinds—from the meat of a chicken to that of a bullock.

At the fruit and vegetable stands one finds all kinds of delicious fruits, fresh from local gardens, or brought by the newly arrived steamers from the Coast.

From its inception, this company has done a prosperous business. Its customers express general satisfaction with goods purchased and with prices charged. In view of the satisfactory relations between seller and consumer, the management wishes to take this opportunity to thank the good people of Honolulu for their generous patronage, which has contributed so much to the success of the store.

To tell of all the good things that are in the store would take up more room than the limited space in a newspaper would allow, so the public generally is invited to visit the store and make a personal inspection.

GOOD QUALITY AND REASONABLE PRICES is the motto of this store.

GAS SYSTEM FOR HONOLULU.

(Continued from page 9.)

The Lowe gas, to be made of petroleum, the material most readily available in Honolulu, and negotiations were entered into with the Lowe gas people in San Francisco for the installation of a gas plant here capable of meeting the prospective needs of the city for a number of years to come. The result of these negotiations was the signature of contracts for the erection of a plant, retorts, engines and containers, capable of manufacturing 150,000 cubic feet of gas daily, to be pumped into the pipes under high pressure so that there would be practically no limit to the quantity made. With a pressure system, indeed, the size of the pipes would cut little figure, the principal consideration being the element of strength.

This quantity of gas, it was estimated by experts, would be capable of supplying all the needs of a city on the mainland of between sixty and seventy thousand population, so it would be ample for Honolulu, even if every household in town were to use gas both for light and fuel.

Besides this contract with the Lowe people, contracts were let to the Honolulu Iron Works for fifteen miles of pipe, to be laid down as mains and to cover the business and main residential parts of the city. This pipe has been ordered from the factory, and is now on the way to Honolulu, and the work of putting it down will be commenced as soon as the first shipment is received.

The contracts so far let by the gas company call for the expenditure of the money received for the paid up stock, as well as for \$125,000 of the bond issue of \$200,000, leaving \$75,000 to be expended in buildings and other improvements. The one point not yet determined is the location of the gas plant. The projectors of the company have several sites in view, but as yet have reached no definite conclusion in the matter. This is a thing that must be determined in the near future, however, as the contracts have been let for everything but the buildings, as has already been said, and the experts who are to install the plant are expected to arrive in Honolulu on the steamer Mongolia. At all events, Mr. Castle will be here on that steamer, and it is thought that the experts are coming with him.

If they are not, they will soon be here, and the people of Honolulu may rest assured that the day of the coal stove is at an end, and that gas as fuel in the kitchen is in sight. What that means, the housewives will be able to appreciate better than anyone else. No doubt there are women in Honolulu who have lived in countries where gas stoves are in common use. These will know what it means to substitute for hot and dirty coal burners, and the equally hot and scarcely less dirty wood stoves, the clean, shining gas burner that is always ready for use, that always has its kindling and fuel in place, and that can be put out and begins to cool off as soon as the day's dinner has been cooked.

One of the hardships of housekeeping in the tropics is the cooking stove. It has been said, and many men have tried to live the saying, that no woman should be compelled to go into the

kitchen in this latitude. It is not that the climate of Honolulu is so hot—but the heat of the climate added to the heat from a great family cooking stove has made the kitchen the only room in the house that was unbearable. And yet many women have suffered this. It is not every man of family who can afford to keep a Jap or a Chinaman in his kitchen. The result has been, in hundreds of cases, that women have had to go into the kitchen, and have literally had their lives almost cooked out of them that the rest of the family might live.

Fuel gas will put an end to this tyranny of the cooking stove. The housewife who wants to get dinner herself—and what wife does not upon occasion?—will but have to go into her clean, cool kitchen, turn on the gas burner, touch a match to it, and find her dinner ready with no more heat than it requires actually to cook the food. More than that, even for baking, the gas stove does not give out an uncomfortable degree of heat. Certainly the stove does not have to be brought to an uncomfortable pitch of heat before the oven becomes hot enough to bake. The oven has its burners, heating it to the required degree almost instantly, an even, steady heat, and when the baking is done these burners are turned off and the oven cools at once.

Similarly, when the dinner is cooked the stove burners are turned off, save where it is desired to keep some part of the food warm, and even then there is required a degree of heat so slight that the temperature of the kitchen is hardly raised at all. Of course, it is possible to get up a great degree of heat with a gas stove, but nobody is apt to do that, because gas costs so much per cubic foot, and the less gas that is consumed the smaller will the housekeeping bills be.

The housewives of Honolulu should be warned therefore. The day of their emancipation, from the hardest of their tasks at least, is at hand. The first of July will certainly see the Honolulu gas plant installed and in working order, and the pipes all laid in the principal streets. Women who are wise will begin to figure upon getting the gas put into their houses, as fuel at all events, if not as light. And as to the relative cost and convenience of gas and electric light, that is another story.

SCHOOLS, PUBLIC AND PRIVATE.

(Continued from page 11)

schools. It may be well to point out that many of the teachers employed in public schools are those who have been trained in our normal school, and that as time goes on it is the earnest desire of the department that all who are employed in public schools should come from the ranks of those who attended the Territorial schools. From the point of view of the department, those who have been educated in the schools in the Territory and who have thereafter, either by attending the normal school established in Honolulu or by attending other institutions of instruction upon the mainland, fitted themselves for positions in their own islands, are the persons who should take charge of our schools. It may be noted that the number of American teachers, which was 327 on June 30, 1903, is now 314. The explanation of this is that the young men and young women who have been educated in our schools have now reached a position in which they can take charge of very much more im-

portant institutions than they used to be able to do. This certainly shows the effect of the education that the department has been striving to give to the Territory. Thus it will be seen that in 1903 there were 78 Hawaiians of pure blood teaching school. Today there are 86, and this goes to show that the work of the department is being concentrated upon the people of the islands, and that the people of the islands are responding to the effort that the department makes.

It is proper to say here that there is a regular system of certificates which are gained by examinations, and that we have a regular set of inspectors who view the work done by the teachers and who report weekly to the superintendent and board of commissioners.

The following table shows the number of teachers employed both in the public and private schools, and it can be noted that the department of education employs more Hawaiian, part-Hawaiians and Portuguese than the private schools do, the numbers being, public schools, Hawaiians, 61; private schools, Hawaiians, 22; public schools, part Hawaiians, 73; private schools, part Hawaiians, 13; Portuguese, public schools, 23; private schools, 11; Japanese, public schools, none; private schools, 9; Chinese, public schools, 3; private schools, 13. The 3 Chinese are citizens who have been born and educated here.

COMPARATIVE NATIONALITY OF TEACHERS.

	Public Schools.	Private Schools.	Total.
Hawaiian	61	22	83
Part Hawaiian	73	13	86
American	179	135	314
British	43	16	59
German	7	8	15
Portuguese	23	11	34
Scandinavian	7	7	14
Japanese	3	9	12
Chinese	3	13	16
Other foreigners	3	13	16
Total	399	247	646

DISTRIBUTION OF SCHOOLS, TEACHERS, AND PUPILS.

The island of Hawaii, which is the largest of this group, has the largest number of schools, though it has not the largest enrollment. On Hawaii there are 57 public schools and 10 private schools, the total enrollment being 5816, of which 4728 are in public schools and 1078 in private schools. There are 132 teachers engaged in the public schools and 38 in the private schools. On Oahu there are 35 public schools and 30 private schools, the former taught by 149 teachers and the latter by 108. The total enrollment for the island of Oahu is 7987, of which 5176 pupils are in public schools and 2811 are in private schools. The large number of schools on Hawaii can be explained by the fact that many of them are in isolated villages, where the population is small and where the attendance falls short, in some cases, of 20 children. It has been the policy of the department to keep open schools where the number does not fall below 12. On the other hand, on the island of Oahu the population is concentrated and there are no schools which fall below from 30 to 40 children, while in Honolulu, which is the chief center of population, there are two schools which number in the neighborhood of 600 each and another which counts 450 or more,

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